

FINANCIAL TIMES

PUBLISHED IN LONDON AND FRANKFURT

No. 28,742

Monday April 5 1982

CONTINENTAL SELLING PRICES: AUSTRIA Sch. 15; BELGIUM Fr. 30; DENMARK Kr. 10; FRANCE Fr. 500; GERMANY DM 2.0; ITALY L. 1,000; NETHERLANDS Fl. 2.25; NORWAY Kr. 6.00; PORTUGAL Esc. 50; SPAIN Ptas. 55; SWEDEN Kr. 6.00; SWITZERLAND Fr. 2.0; EIRE 42p; MALTA 30c

KIVETON PARK STEEL
BRIGHT-FREE MACHINING STEEL
FOR FORGING, UPSETTING
& EXTRUSION FROM KIVETON PARK

- Rounds, hexagons, flats, carbon and alloy steels. Coiled coils for cold forging and extrusion, sections a specialty.
- All in a wide range of finishes. Sizes from 1/2" - 5"

There are no finer springs than Springs by **Riley**

Robert Riley Ltd. Rochdale. Tel: 44968

NEWS SUMMARY

GENERAL BUSINESS

Bonn invites Reagan to speak

President Reagan has been invited to address the Bundestag, the lower house of West Germany's parliament, when he visits Bonn in June. He would be the first U.S. President to do so.

The news followed a report in the West German newspaper that Reagan had been invited and was eager to accept.

Fraser pressure

Australian Premier Malcolm Fraser called a Liberal meeting for Thursday to discuss party leadership following heavy defeat in Victoria's state elections. Page 3

Diplomat killed

French police said they had no clues to the identity of the woman who shot dead an Israeli diplomat in Paris on Saturday. Two Lebanese groups claim responsibility.

Gaddafi visit

Libyan leader Muammar Gaddafi may visit Greece this month, according to the Athens daily Kathimerini.

Training talks

Employers and union leaders will try to reach agreement this week on a plan to provide all 16-year-olds with a year's programme of training, work experience and further education. Back Page

Police probe

Scotland Yard said the Observer's claim that an inquiry is to be launched into alleged London police corruption was "completely untrue".

Women picket

Women picketed a women's meeting in Blackpool as part of a three year battle to achieve equal rights.

Tribut protest

About 5,000 people are expected to march through Glasgow next Saturday in protest against the Trident missile.

Cargo ship sinks

Seven crew were killed and three others were missing after a Moroccan cargo ship sank off Vigo, Spain.

Swiss spy claim

Switzerland has protested to the Soviet Embassy in Bern about espionage activities by two of its staff who have since left the country.

Pot-holders found

Two men were rescued from a pot-hole in Bussell Moor near Matlock, Derbyshire after being lost for 24 hours.

Chay returns

The first British yacht to finish the Whitbread round the world race was United Friendly, skippered by Chay Blyth. It came sixth, almost a week behind the Dutch winner Flyer.

Driver run over

A Coventry van driver was killed by his own vehicle which apparently rolled over him shortly after being parked.

Gut reaction

A New York man weighing 57 stone had 147 lbs of fat removed from his stomach by surgery. A special operating table had to be built.

Briefly

About 10,000 marched through Glasgow to protest against the Pope's planned visit. Poland's curfew will be lifted for three days over Easter. Edward Heath arrived in China for a seven day visit.

BP Oil reports £126m losses

BP OIL GROUP, the oil refining and marketing arm of British Petroleum in the UK and the Irish Republic, reported current cost losses for last year of £126m. (236m). Back Page

GILT-EDGED business on the London Stock Exchange

jumped 43 per cent to a record £17.89bn last month. Page 23

FRENCH interest rates

showed an easier trend as the franc continued to improve within the European Monetary System. The immediate pressure on the EMS seems to have abated, although currencies such as the French and Belgian francs, and the Italian lira are only kept within official limits by very high Eurocurrency interest rates. The Belgian franc remained the weakest member, but well above its alarm bell divergence limit. Firmest currency in the system was still the D-Mark, followed by the Dutch guilder.

SENIOR MINISTERS

have become increasingly belligerent and explicit in their commitment to re-take the Falkland Islands from Argentina, if necessary, by armed force, in the face of continuing Conservative Party anger over Government handling of the issue. The Government's freedom of manoeuvre is now severely limited as the Falklands invasion has become a major crisis of Tory Party confidence in the conduct of foreign and defence policy. Tory whips were yesterday talking to all back-benchers in an attempt to cool tempers after Saturday's heated and enthralling Commons debate. Intense activity is likely in the next two days to avoid a significant back-bench rebellion after the full-scale debate scheduled for Wednesday. The political future of both Lord Carrington, the Foreign Secretary, and Mr John Nott, the Defence Secretary, remains pre-



The chart shows the two constraints on European Monetary System exchange rates. The upper grid based on the weakest currency in the system, defines the cross rates from which no currency (except the lira) may move more than 2% per cent. The lower chart gives each currency's divergence from the central rate against the European Currency Unit (ECU) based on a basket of European currencies.

DUNLOP AND MICHELIN are to seek international standards for cut tyre and wheel sizes. Back Page

HOCHEST UK, part of the German-based chemicals group, warned that widespread replacement of brand named drugs by cheaper generic ones would destroy the British pharmaceutical industry. Back Page

DOWTY, the Chichester-based aircraft components and mining equipment group, is to cut its aerospace and defence division workforce by about 850 and close two small subsidiaries.

LEADERS of 108 unions affiliated to the TUC meet today to begin a campaign against the Government's Employment Bill. Back Page

WOMEN'S PAY should be improved by strengthening legislation and collective bargaining structures says the Low Pay Unit. Page 6

BANKING, Insurance and Finance Union is urging members to protect their jobs by obstructing the introduction of new technology. Page 6

CASS ELECTRONICS is raising about £1m with a share placing and will be introduced to the Unlisted Securities Market. Page 20

LAIRD GROUP, the transport systems and engineering concern, increased taxable profits to a record £18.85m (£18.57m) for the year ended December 27. Page 20, Lex Back Page

Marines destroy helicopter

Argentine corvette damaged

Islanders face military rule

Reinforcements pour in

Diplomatic moves continue

No Cabinet changes imminent



Mario Menendez, Argentinian-appointed governor of the Falkland Islands, in Buenos Aires yesterday. Troop carriers outside the Falkland Island Company offices in Port Stanley show the strength of the invading forces

Tory whips seek to prevent revolt over Falkland Islands

BY PETER RIDDELL, POLITICAL EDITOR

There was cross-party support for a tough line in Saturday's debate. But, as Mr Nott indicated in his interview, the Government expects public doubts and criticism over the coming weeks if there is armed conflict and Ministers will try to tie Labour down. Mr Nott said on ITV's Week-End World that he would "unhesitatingly" resign if he lost the confidence of Cabinet and parliamentary colleagues and the Prime Minister. "But for me to quit my post at this moment would be very damaging indeed for the Government." It is clear, however, that if either the operation to re-take the Falklands fails or there is what is regarded by MPs as a "sell-out" to Argentina then the pressures for the departure of Mr Nott and Lord Carrington will become irresistible.

Britain is prepared to attack Argentine navy, warns Nott

BY JIMMY BURNS IN BUENOS AIRES AND DAVID TONGE

FIRST elements of the largest British assault force assembled since Suez will set sail for the Falkland Islands this morning. Mr John Nott, the Defence Minister, warned yesterday that Britain is prepared to attack the Argentine Navy now stationed off Britain's colony, 8,000 miles away in the south Atlantic. Though stressing Britain's determination to achieve a diplomatic solution, he left open the option of an attack on Argentina itself. Ministers are under intense pressure from Tory back-benchers to take a tough line. Initial clashes between British marines and invading forces on the main island on Friday left one Argentine officer dead and several wounded. It emerged yesterday that on the island of South Georgia, several hundreds of miles away, a small detachment of British troops opened fire on two Argentine helicopters, destroying one and killing at least three Argentinians. An Argentine naval corvette is also believed to have been damaged by the British marines, who yesterday surrendered the island without further resistance. The Argentines had been led to believe that the island was uninhabited, except for unarmed officials of the British Antarctic survey, and a group of Argentine scrap merchants, whose illegal landing on the island two weeks ago sparked off the crisis. There were also unconfirmed reports in Buenos Aires yesterday that six marines had managed to escape from the Falkland capital, Port Stanley, and were organising some resistance among islanders in the interior.

City concerned over block on assets

BY WILLIAM HALL AND GARETH GRIFFITHS

The British Government's decision to block Argentine assets held in the UK and suspend official insurance cover on exports to Argentina will severely disrupt UK trade with the area and present major problems for international banks operating in London. It is the first time the UK Government has taken action to block another country's assets in London, since Rhodesia declared UDI in November 1965, and several bankers expressed concern yesterday that the move would damage the City's reputation as a neutral international financial centre. The Government issued a statutory order, the Control of Gold, Securities, Payments and Directions 1982, on Saturday, which immediately took effect. The order, made under the Emergency Laws (Re-enactment and Repeals) Act 1964, prohibits banks from making payments or transferring funds on the instructions of either the Argentine Government or Argentine residents. Bank of England will issue notices clarifying details later this week. Mr Nott's immediate concerns centre on the impact of the move on their correspondent banking relationships with Argentinian banks, international loans to Argentina and foreign exchange and money market dealings. Treasury officials said yesterday that the move was not designed to halt all trade with

Argentina but it is clear that it will make the problems of both importers and exporters considerably more difficult.

There were widely differing views in London yesterday about the effect of the move on Argentina's ability to tap the international capital markets. London-based banks have loaned Argentina \$5.8bn while Argentina only has \$1.4bn on deposit with London banks. Some bankers said that Argentina would just borrow in the interior. Continued on Back Page

Reagan refuses to defer tax cuts

BY REGINALD DALE, U.S. EDITOR IN WASHINGTON

PRESIDENT Reagan has again ruled out any deferral of his tax-cutting programme despite soaring budget deficits, and has rejected quick solutions to America's economic problems. Mr Reagan, who is struggling to recapture the political initiative in the face of mounting opposition to his budgetary and economic policies, launched a novel series of five-minute radio broadcasts at the weekend. They are intended to take his message directly to the American people without having it filtered through or truncated by reporters and editors. Mr Reagan's quick-talking defence of his programme came after the New York Times had reported that his administration believed that the 1983 budget deficit would be \$124bn (almost £70bn) against the initial February estimate of \$91.5bn—even if his controversial budget is adopted in its entirety. While Mr Reagan declined to comment on the report, the Office of Management and Budget said that updated budget estimates due at the end of this week would include "some technical revisions which might increase the deficit slightly," but not on that scale. Mr Reagan said that interest rates were breaking all the rules of the game by refusing to fall, and should come down significantly. "To do this, a signal must be sent that, while the political process always requires some compromise, government this time intends to stay the course," he said. He said that the broadcasts reminded him of his earlier work as a radio sports commentator when he earned \$5 a game broadcasting Iowa university football games nearly 50 years ago. Mr Reagan tacitly conceded that his economic recovery programme had been slow to take effect. It would only really start with the 10 per cent tax cut due on July 1, he said. Last autumn he gave October 1, 1981, when his first 5 per cent tax cut took effect, as the starting date for recovery. Mr Jim Wright, the House Democratic leader, urged the President in an official response, to reconsider his "one-sided" tax cuts. "I renew the call for some flexibility, a little less rigidity, a willingness on the part of the President to recognise the harsh realities of suffering among those nearly 10m Americans who have been thrown out of work," he said. Mr Pete Domenici, Republican chairman of the Senate budget committee, said that his committee was studying six separate proposals to try to keep the 1983 deficit under \$100bn—none of them President Reagan's. They were based on the assumption that defence spending should increase in real terms, but less than proposed by Mr Reagan; that revenue should be increased and that the growth of entitlement programmes, such as social security and food stamps, should be restrained. Why Reagan support is slipping, Page 19

FT business survey optimistic

BY MAX WILKINSON, ECONOMICS CORRESPONDENT

A GENERALLY more optimistic view of Britain's economic prospects is shown by the latest Financial Times Business Opinion Survey published today. The survey in March showed a moderately improved perception of the general business situation, with a better trend in recent deliveries and orders, somewhat improved capacity utilisation and greater buoyancy about the prospects for exports. The companies interviewed, in the building and construction, food and tobacco and textiles and clothing sectors, confirmed the general expectation of past surveys that wage increases would remain in the 7 per cent to 8 per cent range. The trend in unit costs continued cautiously downwards, but a slightly higher level of prices increases was expected at an annual 9 per cent. This may reflect the generally improved outlook for profit margins which the survey has shown in recent months. There was a continued increase in optimism that earnings per share would improve, a trend which has been evident in the survey for more than a year. Perhaps as a reflection of the general improvement in business confidence, a larger proportion of firms said they were expecting to increase capital spending next year. However, investment expectations had sunk to a comparatively low level a year ago. The recent increase may therefore reflect the moderately more optimistic forecasts for the economy which have been issued by the Treasury and independent bodies during the last two months. The balance of respondents who expected investment to increase fell below zero only for a comparatively short period last spring. This accords with official data which show that investment held up better than had been expected during the recession. Details, Page 8

CONTENTS

Argentina: behind the euphoria	18
U.S.: why Reagan's support is slipping	19
Technology: new moves to sighted robots	7
Management: oiling the wheels for women in industry	16
Lombard: Sue Cameron on lead in petrol	19
Justinian: Falklands sovereignty defined	15
Editorial comment: the Falklands crisis	18
Survey: Electronic Components	9-14
Arts	17
Appointments UK	24
International	22
News Pages	4
Building Notes	18
Business Diary	8
Company News	20
Crossword	17
Entertain. Guide	17
Finance Diary	22
Insurance	8
Int. Cap. Markets	21-22
Int. Co. News	22
Labour	24
Leaders	18
Letters	18
Lombard	18
Money & Markets	18
Money & Exchange	24
Overseas News	22
Parliamentary Dry	24
Raising	8
Share Information	25-29
Technology	7
TV and Radio	4
UK News	18
Unit Trusts	27
Weather	30
World Econ. Ind.	2
World Stock Alts.	2
World Trade	3
ANNUAL STATEMENTS	
Scott. Econ. Inv.	20
Lat. Group	22

For latest Share Index: phone 01-246 8085

22 KINGSWAY LONDON WC.2.

50,000 SQ. FT. OF SUPERB OFFICES

WITH CONFERENCE FACILITIES AND PRIVATE CAR PARKING

TO BE LET

Hillier Parker
May & Rowden

77 Grosvenor Street, London W1A 2BT
Telephone: 01-629 7666
also City of London, Edinburgh and Overseas

THE FALKLAND ISLANDS INVASION

Export cover suspension will hit UK trade

BY PAUL CHEESBRIGHT, WORLD TRADE EDITOR

NEW BRITISH business with Argentina will be severely restricted, following the Government's decision to suspend export insurance cover on goods destined for that country.

The decision, made as part of a package of economic constraints to put pressure on Argentina, was described yesterday by the Export Credits Guarantee Department (ECGD) as a "precautionary measure."

The cover can be resumed whenever the Government thinks fit, and therefore is different from an independent decision by the ECGD to refuse exporters the insurance they

demand because of deteriorating commercial conditions. Such refusals have been made in the case, for example, of Iran.

Existing contracts, already covered by ECGD, are not affected, however. About 60 per cent of British exports to Argentina, running at £172.8m in 1980, are backed by the ECGD. This is double the worldwide average.

Most new business in Argentina has in recent years been generated through the provision of general purpose lines of credit provided by the commercial banks but supported by the ECGD.

The immediate problem for the Department is to decide whether to continue cover on the unused portion of any outstanding credit lines. Some £40m has been offered to Argentina over the past 13 months through such lines of credit, most of them of medium-term maturity.

These lines of credit have been provided at subsidised rates of interest in accordance with international guidelines. Lately the rates of interest have been

10.5 per cent on credits of up to five years. The Government has bridged the gap between this rate and the market cost of the funds.

The suspension of export credit cover bears most heavily on exporters of capital and semi-capital goods, which are mainly sold on credit terms of between six months and five years.

British exports have been bunched mainly into this general category, which embraces specialist machinery and transport equipment. ECGD cover has been historically light at the short-term end of the market, usually associated with consumer goods, and at the long-term end, usually associated with capital projects business.

Total ECGD exposure in Argentina is less than £300m, indicating that, as a trading partner, Argentina has been of marginal importance. By contrast, its exposure in Poland is nearly £1.8bn and in Romania £405m. But, especially over the last two years, there has been a greater effort on the part of both Government and exporters to expand sales and win a larger slice of the import market linked to Argentinian development plans.

The menace for the Department is that, in the wake of the suspension of cover, Argentinian buyers may feel emboldened not to honour existing obligations, further straining its already tight financial position.

Spain gives veiled backing to Argentina

By Robert Graham in Madrid

THE SPANISH Government has distanced itself sharply from the EEC by declining to back Britain over the Falklands and giving veiled support for the Argentine action.

At the same time, there is concern here that the issue could complicate negotiations with the UK on the future of Gibraltar. These are due to begin on April 20, when Spain re-opens the frontier to the Madrid.

Spain has consistently supported Argentina's claim to the Falklands, referring to them always as the "Islas Malvinas." In the wake of the invasion, the Spanish Cabinet has again endorsed this support, maintaining that Britain has been prolonging a colonial situation. An official statement said that colonial situations, such as that persisting in the Falklands, could result in "conflicts like the present one."

While opposing the use of force to resolve such colonial disputes, the statement avoided any call for Argentine troops.

Sr Leopoldo Calvo Sotelo, the Prime Minister, was careful to state over the weekend that "the problems of Gibraltar and Las Malvinas are different and distant."

Nevertheless, the number of editors in the Spanish Press yesterday pointed out that Britain might now toughen its stand on handing over sovereignty of Gibraltar.

Significantly, the Spanish extreme Right has given Argentina outright support and this sector of opinion, with substantial backing within the armed forces, has been most critical of what it regards as Government concessions to Britain in reopening the frontier—unilaterally closed by Spain in 1969.

So far, no one here has pointed out the significance of the Argentine action in relation to the two Spanish enclaves of Ceuta and Melilla in North Africa, which are claimed by Morocco.

Naturally, those advocating it believe an attack would be successful, though no one denies that the subsequent need to prevent the Argentinians trying to recapture the islands would have to involve a substantial fleet based permanently in the area.

U.S. makes clear it would oppose recapture of islands

BY REGINALD DALE IN WASHINGTON

THE REAGAN Administration is making it clear that it will be prepared to mediate, if asked, in the Falkland Islands dispute, in which it has repeatedly called on Argentina to withdraw its forces and restore the status quo.

However, it is also making it equally clear that it would oppose any British attempt to recapture the islands by force.

The invasion has confronted the Administration with a dilemma, which, it openly admits, it would prefer not to have to face.

Britain is, of course, a Nato ally, although the Falkland Islands are outside the alliance's operating area, which extends only as far south in the Atlantic as the Tropic of Cancer. Argentina, on the other hand, is one of the principal Latin American countries to which the U.S. is looking for support in its efforts to stem the tide of guerrilla warfare in El Salvador and other countries of Central America.

Officials in Washington feared if Britain were to use force, most Latin American countries would rally behind Argentina. The U.S. would not want to be seen as publicly supporting the British action.

The chances are that Washington will use the time it takes for the British naval force to reach the islands to work actively behind the scenes to

try to avoid a military confrontation.

However, officials here at the weekend seemed to have little idea of how such a confrontation could be avoided, given Argentina's determination to keep its forces on the islands and the apparently equally firm determination of Mrs Thatcher's Government to dislodge them.

The U.S. is also formally allied to Argentina under the Inter American Treaty of Reciprocal Assistance, or RIO treaty. It is virtually unthinkable, however, that Argentina could invoke the treaty to invoke U.S. military support in the event of a British counter-attack on the islands.

While the U.S. has stayed deliberately quiet on the issue of sovereignty over the islands in recent days, it has in the past acknowledged that they are a legitimate British possession.

The initial hostility in Washington over Britain's decision—now beginning to be sobered by the realisation that there is a real risk of at least limited war in the Southern Atlantic.

The U.S. Press has on the whole sided with Britain, despite the colonial overtones of the affair. The Washington Post yesterday suggested that Argentina may have bitten off a bit more than it can chew and said: "The Brits have nothing to apologise for in the Falklands."

Bank to explain details of freeze

By William Hall

BANK OF ENGLAND officials were working over the weekend in order to be able to respond sensibly today to inquiries from banks and traders about the impact of the Government's decision to freeze Argentinian assets.

Following the abolition of UK exchange control in October 1979, the Bank has dismantled its facilities for dealing with inquiries, but is expecting to deal with the current situation by issuing notices giving further details within a few days.

The Government implemented its decision to freeze Argentinian assets in Britain by laying a statutory instrument, the Control of Gold, Securities, Payments and Credits (Argentine Republic) Directions 1982, before Parliament last Saturday. It took effect immediately.

The preamble to the instrument says that "the Treasury are satisfied that action to the detriment of the economic position of the UK is being taken or is likely to be taken by the Government or persons resident in the Argentine Republic" and is issuing directions under section 2 of the Emergency Laws (Re-enactments and Repeals) Act 1964.

The directions prohibit (except with Treasury permission) any recipient in the UK, the Channel Isles or the Isle of Man of an order from the Government or of any person resident in the Argentine Republic from trying out that order in so far as the order:

- requires the recipient to make any payment or to part with any gold or securities or
- requires any change to be made in the persons to whose credit any sum is to stand or to whose order any gold or securities is to be held.

Government officials were anxious to play down the effects the measures would have on London's standing as a neutral international financial centre. They stressed that they were not confiscating Argentinian assets, as ownership would remain with Argentinian residents.

TASK FORCE PUTS TO SEA TODAY

Naval blockade is likely first action

BY BRIDGET BLOOM, DEFENCE CORRESPONDENT

MR JOHN NOTT, the Defence Secretary, yesterday reaffirmed that Britain's political objective in the Falklands was to re-establish British administration there, if necessary by force. "A very large naval task force" will today be on its way to the South Atlantic, he said.

Orders to the task force to engage Argentine forces have not yet been given. If and when they are, the vessels could take two weeks to reach the area—there will be two main military options: blockade of the islands or their invasion. Both present serious problems.

A blockade is initially the most likely. Argentina is said already to have up to 5,000 troops on the two main islands, and an invasion could hardly be mounted without substantial risk to the lives and "freedom" of the 1,800 Falkland Islanders whom the British operation would be designed to protect.

The Defence Ministry is releasing only scant details of the task force. It has acknowledged that HMS Invincible, the newest aircraft carrier (which has actually been sold to Australia for delivery in 1983) leads the force, together with the carrier Hermes and the two ageing assault ships, Fearless and Intrepid (retrieved from Mr Nott's defence cuts only last month) is due to leave from Portsmouth today.

It is believed, but not confirmed, that nearly 20 other warships which were last week engaged in Exercise Springrain off Gibraltar are also being sent south, although there were conflicting reports yesterday from Gibraltar that they had actually sailed. Additionally, at least two Royal Fleet Auxiliary tankers,

Merchant ships warned

BRITAIN'S MERCHANT fleet has been advised by the Government to stay out of Argentine waters during the crisis over the Falkland Islands, writes Andrew Fisher.

At the weekend there were no British vessels in any Argentine ports, but a 15,000 tonne general cargo carrier, the Banbury, has been ordered by its owners to remain in Montevideo until further instructions were given.

The Banbury, originally due to sail to Buenos Aires on Tuesday is carrying a cargo of manufacturing goods for Argentina, and was to take on wool for export to Europe.

The ship is part of the only regular service operated from Britain to Argentina. Known as BHLR—an abbreviation of the separate lines involved—it is run by Blue Star Line and Furness Withy.

Mr William Kirkbride,

general manager of Furness Withy, said the service covered Brazil, Uruguay and Argentina and earned gross freight revenues of some £20m a year. But business was larger before Britain joined the EEC which has strict quotas on meat exports from Argentina. BHLR runs two refrigerated container ships and seven general cargo vessels.

Although the service was not a major part of the company's activities Mr Kirkbride said: "We are quite concerned and have also advised some of our expatriates in Argentina to go to Montevideo in the interim period."

Another BHLR ship, the Devon, left Buenos Aires about 10 days ago with a refrigerated meat cargo. The Derwent, a general cargo ship was about to start loading at Liverpool for its South America trip before the crisis.

Mixed reaction among Latin American countries

BRITISH delegate, said London would welcome the help of third party negotiators. This was offered in the Council by the U.S.

The Organisation of American States is to meet in Washington later today at Argentina's request. Sr Nicolas Costa Mendez, the Argentine Foreign Minister, who defended his country's action in the Council on Saturday, will seek the organisation's support.

Sr Jorge Illueca, Panama's Foreign Minister, who made a strong attack on Britain, calling it an imperialist and colonialist power, is expected also to address the special OAS session. He cast the only negative vote in the Security Council.

During the debates that preceded the Council vote, several Latin American states which are not Council members, spoke in support of Argentina's sovereignty claim. Among these was Brazil, which appealed to both sides to act with moderation and avoid aggravating tension in the region.

Bolivia spoke of Britain's "invasion by force" 150 years ago and said Argentina's willingness to negotiate had been "foiled".

Peru, one of whose citizens, Sr Javier Perez de Cuellar, is now the UN Secretary General, said the root cause of the problem was Britain's usurpation, "act of plunder" and installation of a foreign population in the Falklands.

Neither Brazil nor Peru seem to see any encroachment by Argentine expansionism. It could mean trouble for them. On the other hand there are many Latin countries which are supporting the Argentine action strongly.

Guatemala, which is still claiming Belize over which it claims sovereignty, has supported the invasion, while Uruguay, which acted as a staging post for the Falkland Islands governor and the party of Royal Marines expelled from Port Stanley has announced that it nevertheless supported the Argentine case.

Instead, a period of intense diplomatic activity may be in prospect in the hope that progress towards a negotiated settlement can be made before the British naval task force reaches the South Atlantic in up to a fortnight's time.

Sr Anthony Parsons, the

UK claims to Antarctic resources at risk

BY HUGH O'SHAUGHNESSY, LATIN AMERICA CORRESPONDENT

BRITISH BASES in Antarctica have been taken over and Britain's claim to a share in the potentially large mineral and fishing resources in the southern continent has been put in jeopardy by Argentina's seizure of the Falkland Islands and South Georgia.

The Cambridge-based British Antarctic Survey maintains six permanent stations in Antarctica, and two which are manned only in the summer. The BAS, whose annual budget is under £6m, is the principal

official British presence in the continent, a slice of which—between latitudes 30 and 60 degrees West—is claimed by Britain as the British Antarctic Territory. Argentina also claims sovereignty over most of this area.

The Territory has been officially administered from Port Stanley and its governor has been the governor of the Falkland Islands and Dependencies. Last year the Treasury sought to cut the BAS budget and have the base at Grytviken

on South Georgia closed.

Last October, it was announced that Britain was to replace the base at Halley early in 1983 at an estimated cost of £1m and also replace, at an estimated cost of £4m, Britain's biggest Antarctic research vessel, HMS Shackleton.

The U.S. Government has estimated that the recoverable offshore oil reserves in the region amounted to billions of barrels, comparable in magnitude to those of the North Sea BP, Arco, Exxon, Gulf and

Texaco are among the companies interested in the region's oil. Large deposits of coal and other minerals, from silver to molybdenum have been discovered.

Air Commodore Brian Frow, director general of the Falkland Islands Office, claimed yesterday that oil was at the heart of Argentina's decision to invade.

A BP spokesman said: "There is promising seismic evidence but until we have done a lot of drilling there we can't be sure what oil is actually there."

Backbenchers tighten noose round Nott in Commons debate

BY IVOR OWEN

ON THE RARE occasions when a United House of Commons goes for the kill, Ministers become acutely aware of the invisible trapdoor upon which they are forced to stand when called to the Treasury despatch box to explain the reasons for an ignominious failure.

When the Commons concluded its emergency sitting on Argentina's invasion of the Falkland Islands on Saturday, Mr John Nott, the shell-shocked Defence Secretary, was beginning to show the tell-tale signs of terminal failure which usually mark a speedy departure to political oblivion. He stood alone by the despatch box collecting his speech notes as ministerial colleagues left the Chamber without speaking to him.

The attempts made from the Tory benches to tighten the noose already in place around his neck underlined the truth of an old Westminster maxim—in politics our opponents sit in front of us and our enemies behind us.

Mr Nott's unhappy and uncharacteristically ineffective performance when he replied to the debate made Tory backbenchers squirm, and one ostentatiously buried his face in his hands. The debate ended in unison, and Mrs Thatcher sat with her head bowed and looking strained. Some Conservatives, including Sir Frederick Burden, whose Gillingham constituency is being hit by the Chatham dockyard closure, shouted "resign, resign" at Mr Nott.

The fact that the Defence Secretary is still in office can be in part explained by the terms upon which he was offered the post by the Prime Minister.

Mr Nott marched into the Ministry of Defence building in Whitehall in January 1981 brandishing an economy axe and the service chiefs soon discovered that it was no idle threat. As every well-informed Tory backbencher knows, it was a weapon which his predecessor Mr Francis Pym had refused to employ to anything like the extent demanded by Mrs Thatcher. He offered to resign rather than ask any one of the three services—particularly the Royal Navy's surface fleet—to operate below the strength and level of efficiency necessary to

satisfy the requirements of Britain's foreign policy commitments, including the honouring of the pledges given by successive governments to defend the Falkland Islands.

Saturday's debate produced some striking similarities and a number of remarkable contrasts to the far more stormy events which rocked the Commons just over a quarter of a century ago when MPs last met for an emergency Saturday sitting.

On November 3, 1956, the House was noisily and totally divided with Sir Anthony Eden, the Prime Minister, who had ordered the RAF to start bombing Egyptian airfields some 48 hours earlier, still the hero of the hour on the Tory benches.

Mr Hugh Gaitskell, the Labour

leader, who had warned from the start that the Opposition would support British intervention in Egypt only if the Government had secured the prior approval of the United Nations, was subjected to venomous attacks for persisting with his "law not war" campaign when he knew that British forces were engaged in combat and a further Anglo-French invasion force was likely to start fighting its way along the banks of the canal at any time.

A remarkable transformation of roles on Saturday saw Mrs Margaret Thatcher give a stumbling performance as she tried to put a veneer of respectability on the Government's failure to mount the naval and military operation needed to prevent Argentina's invasion of the

Falkland Islands.

On the other hand, Mr Michael Foot, in the most authoritative and impressive speech he has delivered in the Commons since becoming leader of the Opposition, was praised from the Tory benches for having "spoken for Britain" in maintaining that Argentina's unprovoked aggression must not be allowed to go unchecked.

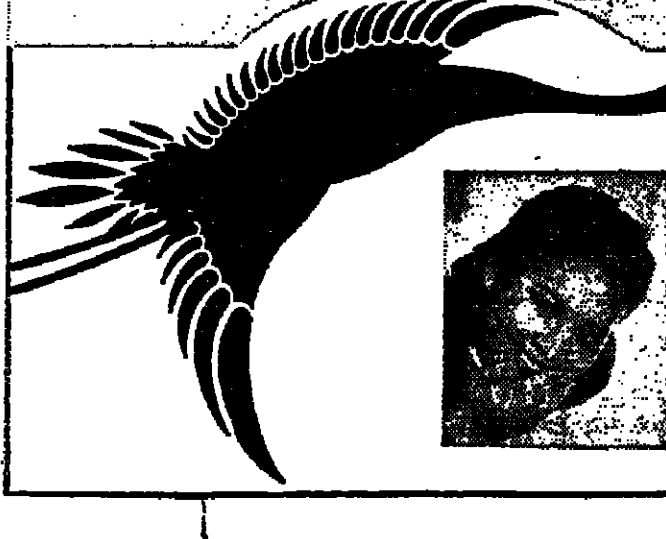
While firmly declaring the Government's aim to repossess the Falkland Islands, Mrs Thatcher was never at her best. She is plainly aware that the very fact that the Conservative Party's image makers have devoted so much effort to presenting her as the Iron Lady as she squares up to the Soviet Union's President Brezhnev must inevitably expose her to

ridicule after the Government's display of ineptitude in protecting British interests.

Equally alarming for the Prime Minister was the chilling response of the Tory benches at crucial points in her speech. As Selwyn Lloyd, Foreign Secretary at the time of Suez, acknowledged later their is nothing more disheartening for a Minister than "cold, disapproving, apparently incredulous silence." This was something which Sir Anthony Eden experienced after the abandonment of the Suez operation.

FINANCIAL TIMES, published daily except Sundays and holidays. U.S. subscription rates \$365.00 per annum. Second class postage paid at New York, N.Y., and at additional mailing centres.

First with the 747 on the shortest route to Tokyo.




Now you can fly a JAL 747 on the fast route from London via Moscow to Tokyo. With incomparable JAL service all the way. Now we're offering you everything you want. Wide-bodied comfort, big time-savings and, of course, our legendary inflight service.

You can now take a JAL 747 on the Moscow short-cut every Monday from Heathrow.

Japan Air Lines is the only airline to offer you a direct daily 747 service from London to Tokyo on the Polar or Moscow Route. Serving you is our way.

Contact your nearest Japan Air Lines office or travel agent for full details of JAL's flights worldwide.

London 01-408 1000
Manchester 061-832 2807
Birmingham 021-643 1368
Glasgow 041-221 6227



NOW FLY JAL

حکومت الامم المتحدة

OVERSEAS NEWS

Fraser set for showdown over party leadership

BY MICHAEL THOMPSON-NOEL IN SYDNEY

A SHOWDOWN over Mr Malcolm Fraser's leadership of the Australian Liberal Party has been set for Thursday. The Prime Minister announced last night that he was calling a meeting of the Parliamentary Liberal Party to face up to the leadership issue and "end the speculation once and for all."

Opec may be retreating from clash with companies

BY ROGER MATTHEWS

THE ORGANISATION of Petroleum Exporting Countries may be backing away from an immediate confrontation with the international oil companies over the level of production in Nigeria.

PLO awaits 'retaliation'

BY HSIAN HUIJAZI

PALESTINIAN GUERRILLAS in Lebanon are braced for a possible Israeli retaliation after Jerusalem accused the Palestine Liberation Organisation of responsibility for the assassination in Paris on Saturday of Mr Jacob Bronshtam, an attaché at the Israeli embassy.

Spadolini fights to save coalition

By Rupert Cornwell in Rome

SIG GIUVANNI SPADOLINI, the Italian Prime Minister, this week faces his toughest task yet in preventing the collapse of his five-party coalition, sending the country almost certainly into general elections later this year.

His first challenge comes today when he attempts to defend the row between Christian Democrats and Socialists over accusations by the former acted improperly in paying a ransom for the release of Sig Ciriolo, a Naples party councillor held last year by the Red Brigades terrorists.

EEC budget talks

Key negotiations by EEC Foreign Ministers on cutting back Britain's payments to the Community budget will now take place on April 27 in Luxembourg, writes John Wyles in Brussels.

Gromyko visit

Mr Andrei Gromyko, the Soviet Union's Foreign Minister, arrived in Belgrade on Sunday for a two-day visit and the first high-level contact between Moscow and Yugoslavia in the post-Tito era, AP reports from Belgrade.

Herd destroyed

A herd of cattle and pigs was destroyed in Denmark yesterday as foot-and-mouth disease struck again dashing hopes that the epidemic on the island of Feunen had ended.

WORLD TRADE NEWS

EUROPE'S PETROCHEMICAL CRISIS

Substantial decline in exports outlook

BY SUE CAMERON, CHEMICALS CORRESPONDENT

EUROPE'S loss-making petrochemical and plastics producers have closed 4.8m tonnes—14.7 per cent—of their effective capacity over the last 15 months, according to analysts at W. Greenwell, a stockbroking firm.

Table: Major Petrochemical Companies Trend Toward Specialisation. Columns: Company, 1970, 1980. Rows: Akzo, BASF, Bayer, Hoechst, ICI, Montedison, Rhone Poulenc, Elfvy.

But it warns: "The European petrochemical and bulk plastics industries are still engaged in a fight for survival—any belief that time or others can solve the problems for it is a sure recipe for lasting and total disaster."

a 650,000-tonnes-a-year surplus of low density and a 210,000-tonnes-a-year surplus of high density polyethylene plastic. "As a result of these, and other, moves to muscle in on the traditional producers, prospects for most European exports of petrochemicals and plastics are poor," the report says.

SHIPPING REPORT

Revenue crisis deepens for world's shipowners

BY ANDREW FISHER, SHIPPING CORRESPONDENT

MOST SHIPOWNERS are scarcely able to pay their crews and cover other direct operating costs in the present dismal state of world shipping markets. Lambert Brothers Shipping said in its latest review.

Zimbabwe order for UK

BY OUR WORLD TRADE STAFF

WADE ADAMS Construction of the UK, in a joint venture with Andrews and Kidd of Zimbabwe, has been awarded the contract for the raising of the Sebake Dam near Que-Que in Zimbabwe.

The project is scheduled to run for three years and involves raising a concrete dam wall, prestressing and earthworks. The Weir Group has won a £2m contract from U.I.E., a member of the French Amrep group, to supply and design a water injection system for the Meren offshore oil field in Nigeria.

World Economic Indicators

Table: FOREIGN EXCHANGE RESERVES (US\$m). Columns: Country, Jan '82, Dec '81, Nov '81, Jan '81. Rows: UK, USA, West Germany, Netherlands, Belgium, Japan, Italy, France.

The Alternative Approach to Banking. THE HIGHER THE MANAGER/CUSTOMER RATIO THE FEWER DISSATISFIED CUSTOMERS. We have more managers per customer than the other main High Street banks. That, in our view, is the way it should be, and that's the way we aim to keep it.

WILLIAMS & GLYN'S The Alternative Bank. 'If you run your own business you'll find this booklet interesting.' It's called A Topical Look at Small Businesses and it's the latest title in the special series of booklets produced by our Business Information Service.

This is an Invitation to Buckle Down in the State of ARKANSAS. They call Arkansas the "buckle" of America's Sunbelt. Its central location puts a market of over 100m people within 550 miles reach—just 24 hours by road.

UK NEWS

CBI supports existing local rates system

BY ALAN PIKE

THE Confederation of British Industry, which has been campaigning against the rates burden on industry, has told the Government the rating system should not be less than the mainstay of local taxation.

The confederation also says business ratepayers should have the same right as domestic ones to pay rates by instalment.

It calls for cuts in local spending by leaving some services to private and voluntary sectors by raising efficiency and by tailoring provision to real consumer need.

The confederation also says business ratepayers should have the same right as domestic ones to pay rates by instalment.

Severe price-cutting in the North has led to a collapse of private-sector industrial prices, according to a survey published today by the CBI's northern region.

Trend is to small units, Cadbury chief says

By Alan Pike

LARGE companies are likely to come under increasing pressure from social and economic trends to split their businesses into smaller units, according to Sir Adrian Cadbury, chairman of Cadbury Schweppes.

Small groups want to set public pay levels

BY PHILIP BASSETT, LABOUR CORRESPONDENT

PAY in small companies should be used to determine levels for the Civil Service, according to the Association of Independent Businesses.

It has been a source of considerable vexation that in the Civil Service, both pensions and redundancy payments have been set very much out of line with what can be afforded by our members.

Brixton: The tough task of converting words into action

SINCE THE riots in Brixton, thousands of words have been written about this south London inner-city area. They include a major report by Lord Scarman, some of whose recommendations are increasingly arousing controversy.

A year after the riots, Lisa Wood looks at what is being done to halt the decline of the area

Lambeth Council may have to pick up the bill. Mr Ted Knight, leader of the Council, said: "We are not putting up any obstacles to these projects, but are taking care to point out that the voluntary groups should be planning revenue costs."

distance of Brixton and who, in the council's view, should not be opposed by small groups in the community. At the same time, Mr Knight said: "Once we deposit the plan and, if there is a public inquiry, the Environment Secretary can intervene."

The Social Democrats, who are strongly contesting the local election in Lambeth next month, have opposed the present development in its manifesto. Mr Patrick Mitchell, of Lambeth's SDP, said: "We are sceptical of a large-scale new development in Brixton; there is no scope for Brixton challenging a shopping development like Croydon."

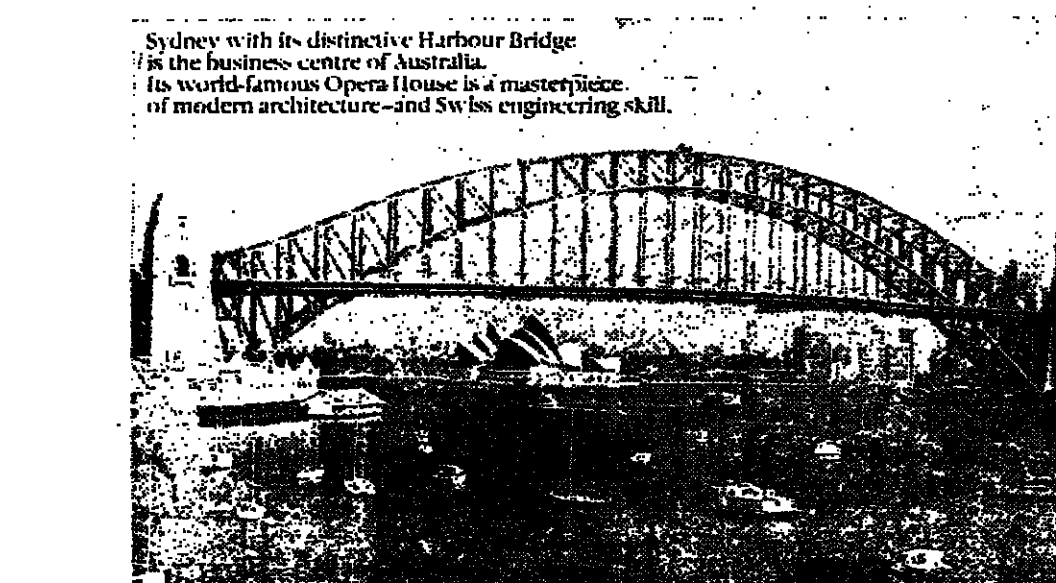
FT story leads to cash boost for furniture maker

BY RHYTH DAVID

AN AMERICAN oil businessman is to invest £100,000 from his own resources in a small Liverpool reproduction furniture manufacturing company after reading about its activities in the Financial Times in August.

how much was needed to expand the company so that it could take on orders which were having to be turned away and when we said about £63,000 would pay for new machinery he suggested a rounded-up total of £100,000.

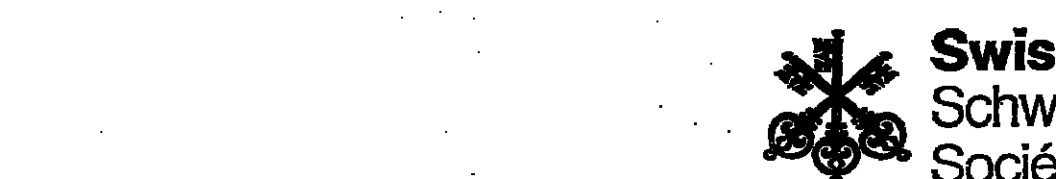
Somewhere around the world a branch of the key Swiss bank is always open for business.



Sydney with its distinctive Harbour Bridge is the business centre of Australia. Its world-famous Opera House is a masterpiece of modern architecture—and Swiss engineering skill.

Business never sleeps. Whether in Sydney, Zurich, London or Tokyo, there's a stock exchange open and the latest gold fixings, indexes, and market ups and downs are being cabled round the world.

Singapore, Atlanta and elsewhere. The phones start ringing and another day begins—with trade financing, foreign exchange, underwriting, investment management, etc. etc. etc.



Swiss Bank Corporation Schweizerischer Bankverein Société de Banque Suisse

The key Swiss bank.

General Management in CH-4002 Basle, Aeschenvorstadt 1, and in CH-8022 Zurich, Paradeplatz 8. Over 190 offices throughout Switzerland. Worldwide network (branches, subsidiaries and representatives): Europe: Edinburgh, London, Luxembourg, Madrid, Monte Carlo, Paris, North America: Atlanta, Calgary, Chicago, Houston, Los Angeles, Montreal, New York, San Francisco, Toronto. Latin America: Bogota, Buenos Aires, Caracas, Lima, Mexico, Panama, Rio de Janeiro, São Paulo. Caribbean: Grand Cayman, Nassau. Middle East: Bahrain, Cairo, Tehran. Africa: Johannesburg. Asia: Hong Kong, Singapore, Tokyo. Australia: Melbourne, Sydney.

BIM guide to help expanding companies

A CHECKLIST to help smaller companies thinking of buying another business has been published by the British Institute of Management.

Shotton gasholder to be blown up

A WELSH industrial landmark will disappear today when a 155-foot high gasholder is blown up at Shotton steel works, North Wales.

Business failures soar in first quarter

TRADE INDEMNITY, the credit insurance underwriters, has disclosed a 15 per cent increase in business failures in the first quarter of 1982 compared with the same quarter of 1981.

NatWest to help small engineering groups

NATIONAL Westminster Bank is to sponsor a move by the London Enterprise Agency to help small engineering companies.

£400,000 air payout

Castle Donington the east midlands airport near Derby, has doubled to £400,000 the share of operating profits it pays to the local authority consortium which owns it.

Chariots of Fire

In Thursday's story in the Financial Times about film financing in the wake of the Oscar successes of Chariots of Fire, it should be made clear that the Twentieth Century Fox Film Corporation and Allied Stars were 50/50 partners in providing \$3m each for the film's production finance.

Countryside Commission opens up to the public

THE COUNTRYSIDE Commission, which was made independent last week, has launched a new prospectus opening up its policies and priorities to public comment.

Table with columns for bank names and their respective base lending rates. Includes banks like A.B.N. Bank, Allied Irish Bank, American Express, etc.

Top earners start to pay higher NI contributions

BY ERIC SAGERT

THE START of a new financial year means various adjustments in tax payments by individuals. For the past three years it has also meant increases in the National Insurance contributions paid by employees and the self-employed — contributions that can be regarded as a social security tax.

	1982/83 weekly contribution £	1981/82 weekly contribution £
Not contracted out		
Employee	12.12	11.52
Employer*	19.25	15.50
Self-employed	26.55	24.25
Employer**	30.14	27.40
Contracted out		
Employee	10.11	8.55
Employer**	14.49	11.17
Self-employed	15.12	15.02
Employer**	21.57	19.62
Annual profits £		
7,000	456.00	444.17
11,000	648.00	570.67

*Includes NI surcharge at 3% per cent. and other charges.
**Includes NI surcharge at 3% per cent. and other charges.

From this week, employees earning at least £220 a week will pay an extra £3.75 a week on NI contributions if they are in the state scheme and £3.32 if they are contracted out. A self-employed person earning £11,000 a year will pay an extra £67.33 a year. These increased payments, which were announced by Sir Geoffrey Howe, the Chancellor, at the beginning of December, arise from two factors. All employees are having their contribution rates increased by 1 per cent for the second year in succession, though the rates for their employers remain unchanged. Secondly, both employees and employers will have those contribution rates applied to higher earnings limits because of inflation. The Government has been quietly changing the financing structure of the National Insurance scheme, putting more of a burden on to employees and reducing the direct cost to the Treasury. For the second year running the amount of Treasury supple-

entirely from direct taxation. A further 0.1 per cent of the rate increase goes towards the NHS. The remaining 0.65 per cent of the rate increase arises to meet the costs of higher unemployment. The Government has decided that such increased costs should be met by those employees still working rather than by employees and employers. It has kept the extra NI contribution burden on employers to a minimum.

The earnings ceiling on which contributions are levied is being raised from £200 to £220 a week in line with inflation. The lower earnings limit under which people earning below this figure do not pay NI contributions is lifted from £27 to £29.50 per week. Sir Geoffrey announced in this year's Budget that the NI surcharge rate on employers' contributions is being reduced by one point to 21 per cent. But this will not come into effect until August. This surcharge is effectively a payroll tax with the contributions going straight to the Treasury. They are not paid to the NI fund. The self-employed are having their flat rate weekly Class 2 contribution, paid by all self-employed, increased by 35p to £3.75. In addition, the Class 4 rate is lifted from 5p to 6 per cent of annual profit between £3,450 and £11,000.

Maiden flight for new Euro Airbus

By Michael Donne, Aerospace Correspondent

THE LATEST version of the European Airbus, the 210-seat A-310, made its maiden flight from the Airbus Industrie's flight test centre at Toulouse on Saturday. The aircraft was airborne for 3 hours 15 minutes, in what was described as a perfect test flight. The aircraft will now move into an extended flight test programme, prior to certification and delivery in March, 1983, to the launching customers, Swissair and Lufthansa.

The A-310 is built by Airbus Industrie, in which British Aerospace has a 20 per cent stake, having an overall design consultancy role in the aircraft. The A-310 is designed to carry up to 210 passengers over short to medium ranges. It is a twin-engine aircraft, with operators having the choice of U.S. General Electric CF6-80A or Pratt and Whitney engines. Orders for 180 A-310s have been placed by 15 airlines. Of these 90 are firm orders and the others are options. The feature of the aircraft is its substantially lower fuel consumption, claimed to be up to 35 per cent less per seat than older-generation narrow-bodied jet airliners, giving savings of up to \$2m (£1.1m) a year in fuel costs at today's prices.

Five A-310s will be involved in the flight test programme. The first two aircraft, powered by Pratt and Whitney engines (destined for Swissair), and the third aircraft, powered by General Electric engines (for Lufthansa), will be used for the actual flight tests. The fourth and fifth aircraft off the line (destined for Lufthansa and Swissair respectively) will be used for route-proving trials.

Why inland post is carried by air

Jason Crisp describes a night flight delivering the Post Office mail



Glyn Genn

EVERY WEEKDAY night at around 11 o'clock an assorted collection of 16 aeroplanes takes off from all corners in Britain to rendezvous at Liverpool airport at midnight. It is thought to be the largest movement of civil aircraft in the UK at night.

At Speke, in a sudden and brief flurry of activity, a million letters change hands and the aircraft fly back to their original airports. The Post Office is now sending about 10 per cent of all first class mail by air freight at night. Until about two years ago, it sent all its long distance mail by rail.

Each night, 43 travelling Post Office trains criss-cross the country with postmen on board sorting the mail while travelling at speeds of up to 100 mph. In addition, ordinary passenger trains carry mail.

The problem is that the timing of departures and the reduction in train services over the years means it is physically impossible to get a letter posted late in, say, Devonshire to Aberdeen by next morning, by train services.

Air transport of mail began after the Post Office came under heavy criticism for the quality of service which had dropped to an appallingly low level. Because of this, the Government included provisions in the British Telecommunications Bill, passed last year, which sanctioned it to lift the mail monopoly if services fell below certain standards. The Post Office has a Government-set target to deliver 90 per cent of first class letters on the following working day, which it is now close to meeting.

British Rail carries around 70 per cent of the mail and the Post Office is one of its largest customers. During the rail strike, the volume of air freighted mail rose sharply, diminishing the impact of the action on mail delivery. The aircraft are chartered from five different airlines—Express Air Services, Iceli Aviation, Eastern Airways, Jersey European Airways, and Dan-Air. They fly from 13 destinations including Belfast, Aberdeen, Exeter, Cardiff,

Bournemouth, Bristol, Glasgow and Gatwick.

Last week, I flew with Dan-Air on the Gatwick to Liverpool flight which then goes on to Belfast. The aircraft was a British Aerospace 748 turbo-prop, with the seats folded and stacked along the side of the passenger compartment. The aircraft was filled almost to the ceiling with mail bags which weighed 41 tonnes, and were held in place by large nets and harnesses. By the following morning, the seats were to be back in place and the aircraft was used for ferrying passengers. (It normally carries a maximum of just under 30 passengers.)

At Speke, the 16 aircraft are parked in a close group and are rapidly unloaded by about 30 airport authority staff. The mail bags are moved to a small warehouse for sorting by the Post Office where there is a staff of 18.

Eleven postmen sort the bags. They cry out the destination of each bag for a checker to note before inconspicuously lobbing it into a ring

of large trolleys each marked with a different location for the returning aircraft. By about 1.30 am the operation is complete, with 4,500 bags weighing 45 tonnes flying on to major sorting offices around the country.

The operation is centred on Speke because it is approximately equidistant from the other airports, is open at night and is relatively fog-free.

The Post Office also has a fleet of seven aircraft chartered from Air Ecosse for Datapost its premium overnight service which was originally launched to carry computer tapes around the country. The aircraft have been painted Post Office red with the Datapost livery, and fly to 16 centres around the country, including Speke. Datapost now has over 20,000 contract customers and carries a wide range of urgent goods from parts to documents. The carriage of urgent documents was one of the small areas which was opened up for competition by the British Telecommunications Act.

Retirement tax relief boosted

TWO SMALL, but welcome, extensions are proposed to the scheme of tax relief for retirement annuity premiums paid by a self-employed person. Such an individual gets tax relief on his contributions up to 17 1/2 per cent of his relevant earnings. If the individual was born before 1916, the amount on which tax relief is given is to

be increased. Some small increase has been allowed in the figures for older savers, but the real change is for those born between 1916 and 1983. They will now get tax relief on 20 per cent of relevant earnings instead of 17 1/2 per cent. This is a welcome assistance for those in their 50s who see retirement approaching.

Similarly, partnerships are able to take tax relief on annuities paid to retired partners; under the present law, these annuities may be increased in line with inflation each year. The amount of the annuity is linked to the retired partner's earnings for the best three out of his last seven active years.

Threat of 50% jobless in Dungannon

BY OUR BELFAST CORRESPONDENT

THE PROPOSED closure of a Courtauld's fabric dyeing and finishing plant at Dungannon, Northern Ireland, will make the area Europe's worst unemployment blackspot, according to a group representing the 300 employees. The campaign to save the Brown and Adam dye works, part of the Moygashel fabric company, has been taken up by Northern Ireland's three-Europe MPs. They believe the

closure will cast doubt over the remaining 460 jobs in the Moygashel group. With representatives of the employees, the European MPs will meet Mr Adam Butler, Minister of State for Northern Ireland, tomorrow to ask what support the Government will give to a £3.4m proposal to modernise the works. Union leaders and other members of the works committee will fly to London

tomorrow to seek support for the proposal from Mr Christopher Hogg, the Courtauld's chairman. Courtauld's announced last month that it proposed to close Brown and Adam because of high costs and to transfer the work to Samuel Heaps. The workers' committee said yesterday that according to local management, a government offer of 5 per cent of the cost of modernisation would provide the basis for negotiations.

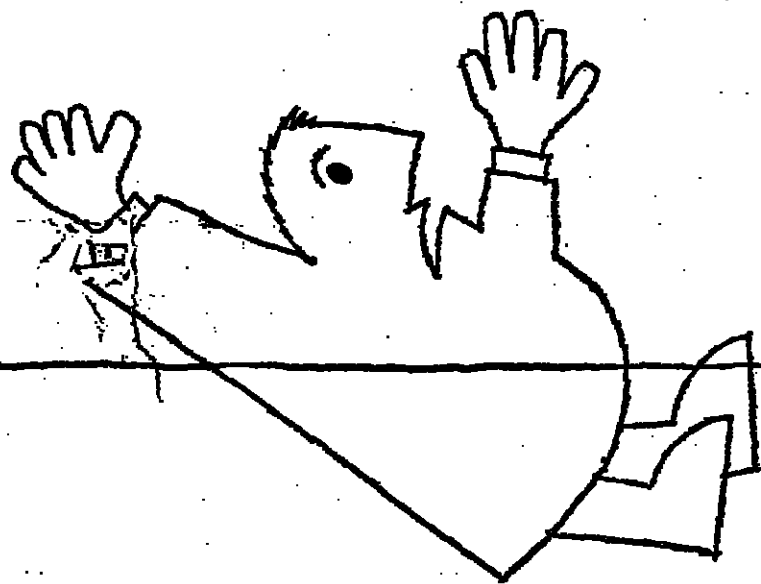
Midlands plea for action on Japan

BY ARTHUR SMITH, MIDLANDS CORRESPONDENT

THE West Midlands regional council of the Confederation of British Industry is urging the Government to take immediate action to improve the balance of trade with Japan. There is a feeling that the industrial base of the region is being eroded," Mr Steve Rankin, regional director, said last night. "We are fast running out of time. There must be immediate action," Mr Rankin said com-

panies representing the full range of industry had expressed strong views about the threat. There was a need to make Japan open its market to European companies and to curb the flow of Japanese imports. An initiative might be taken on a national or an EEC basis. The CBI was already pressing the case but companies in the West Midlands thought the situation needed to be treated with urgency. "The Japanese

ship first and talk later," Mr Rankin said. On the economic front, West Midlands companies reported growing resistance to low pay settlements. Many had deferred any award but average deals were between 4 and 6 per cent. It was thought that although this level could be sustained for a period, the upwards pressure was building. The shakeout of the labour market seems likely to continue.



Have you recently found yourself becoming an involuntary non-profit organization?

The earnings reports of many companies are experiencing a widespread outbreak of parentheses. (We mean those depressing bow-legged punctuations that signify operating losses in balance sheets.) In fact the problem of diminishing profitability is widespread enough to have acquired an aura of immutability, something like a law of contemporary economics...making it sound almost audacious to suggest the problem is solvable. Perhaps it's time for a little audacity...and a Data General ECLIPSE™ computer. ECLIPSE is a complete information system that will never be accused of insufficient ambition: its mission is to help cause immediate and dramatic improvement in your bottom line. It does this by helping you instantly identify

inventories carried unprofitably, back orders being filled tardily, cash flow problems...those areas where profits often erode unseen by management. It isn't surprising, then, to find an ECLIPSE computer turning up in so many profit-making organisations, like Express Dairy Foods, North Thames Gas and Guinness Group Sales (Ireland). In fact, many of the largest and most successful British companies in banking, industry, distribution and services are using Data General computers. Is this a stunning coincidence or a considerable profit opportunity? Those who still believe in opportunities are invited to write for particulars to: Marketing Communications, Data General Limited, 3rd and 4th Floors, Hounslow House, 724-734 London Road, Hounslow, Middlesex TW3 1PD. Tel: 01-572 7455.



Established 1833

Arbuthnot Latham Merchant Bankers

Our new address:
**Northgate House,
 20/24 Moorgate,
 London, EC2R 6HH
 Tel: 01-628 9876
 Telex: 885970 General
 884434 Forex
 (Reception: 6th Floor)**

Manchester Office:
 39 Princess Street, Manchester, M2 4FN.
 Tel: 061-228 2411
 Telex: 669442

Overseas Offices and Associates:
 Singapore, Indonesia, Hong Kong, USA.

All Banking and Corporate
 Advisory Business of the merged Dow Scandia
 Banking Corporation Limited and
 Arbuthnot Latham & Co., Limited will be
 transacted in the name of:

Arbuthnot Latham & Co., Limited
 Enquiries to:
 P.J. Brasier, Chief Executive

Shareholders:
 Dow Banking Corporation, Switzerland; Sveriges Allmänna Sparbank, Sweden;
 Bank of Helsinki, Finland; Forretingsbanken, Norway.

UK NEWS = LABOUR

John Lloyd looks at the closed shop in our concluding feature on Tebbit's Bill
Rights for those who will not join a union



The Employment Bill

ONLY ONE part of the Employment Bill was a complete surprise: that was Clause 1, which enables "the Secretary of State to make payments towards compensating individuals who in certain past cases have been dismissed for failure to conform to the requirements of a union membership agreement (closed shop)."

Curiously, the inspiration for the clause came to Mr Norman Tebbit, the Employment Secretary, from a report which, though still unpublished, is thought not to be particularly critical of the closed shop.

Professor John Gennard, of Strathclyde University, undertook a major study of the institution in 1978, financed by the Employment Department. One section of the report notes that about 325 individuals were dismissed from their jobs between 1974 and 1980 because they refused to join closed shops.

Mr Tebbit decided that the waters should not close over the heads of the victims. He therefore set aside £2m, or a little more than £5,000 per person, with which to make amends. It was an unusual step for retrospective legislation is not popular in Westminster. However, according to Mr Walter Goldsmith, director general of the Institute of Directors and a close adviser to Mr Tebbit, "retrospective legislation is perfectly valid if it rights wrong, but not if it wrongs a right."

The Labour opposition has

been so far unsuccessful in eliciting from Mr Tebbit details of those who will benefit from the fund. His department has said that further research needs to be done. However, one group, which may be representative of all, is the so-called "Hull Six"—six Hull City Council employees dismissed for refusing to join a union once Hull had agreed a closed shop in 1978.

Of the six, five were manual workers, and included a building foreman, a plumber and a museum attendant. Only one—Mr Peter Armstrong, an archaeologist—was of officer grade.

Mr Armstrong, now in his mid-thirties, had been employed by the council for six years when he was told he would be required to join a union. He was, he says, opposed to "the way it was done," an objection which appears the other five shared.

"The thing just seemed so cut and dried. There was no balloting of the staff. It was just said that this was now a condition of employment. It was the result of a process on which

TWO CLAUSES extend the restrictions on the closed shop to include:

- In Clause 1, a measure to pay state compensation to workers dismissed for not joining a union closed shop between 1974 and 1980;
● In Clause 10, a measure to make void any term in a contract specifying union labour only, and making it unlawful to discriminate against a contractor on union membership grounds.

I had not been represented. I think that each of us in our own way thought we had been deprived of that wonderful freedom of voting with our feet."

Ironically, Mr Armstrong now says he appears likely to be forced to enjoy that freedom. He is employed by another authority—Humberston—which will shortly cut its archaeological staff from eight to two.

Mr Armstrong's case, and that of his colleagues, has been championed by Mr Philip Hamer, a Hull solicitor. He has secured a ruling from the European Court that the Hull Six's case would fall under the same judgment terms as those of the dismissed railwaymen whose case was won in Strasbourg last year. Mr Armstrong believes they will all receive compensation from the £2m fund once the Employment Bill is enacted.

The final measure on the closed shop in the legislation was thoroughly expected.

Clause 10 seeks to outlaw the practice of specifying that contract work will be performed by union organised companies, a practice common among local authorities, in the building industry and in the print.

The major benefit to unions of seeking to ensure union-labour only contracting is, of course, the encouragement it gives to the extension of unionisation. They also argue that where non-union contractors' labour works with unioned labour at lower rates of pay, tensions and disruptions are engendered.

Fleet Street managements will not seek to race them to the barricades. The practices associated with the closed shop are so ingrained that they will be difficult to change even if management had a will to do so, which it probably does not.

Provincial newspapers, however, and printing generally, though, may be a different question. Mr Peter Kavanagh, building trades secretary for the Trags-

port and General Workers' south-east region, argued powerfully at a left-wing trade unionists' conference last weekend that this measure in the Bill could set the construction industry alight.

That same weekend, it became clear that the print unions, especially the National Graphical Association, had told the other unions that they would simply defy the clause—and would expect TUC support for doing so.

Both construction and the print have proved combustible areas for industrial law in this last decade, and could be so again. The building trade employers wanted the clause, and must now be willing to use it, gambling that the very high levels of unemployment will damp down incipient flames.

Will the unions convince their members to defend the closed shop in all its ramifications? And if they do, will they wait for an employers' attack which never comes? Mr Goldsmith, and the Government with him, believes the issue to be one of personal freedom and the securing of greater efficiency through breaking the degree of control unions exercise over work practices.

The unions argue that personal liberty can be ensured but only if bargaining strength is secured first and that attacks on the closed shop are an invitation to disruption. The battle still waits on a battleground.

Scunthorpe steel job cuts agreed

Financial Times Reporter

UNIONS and management at British Steel Corporation's Scunthorpe works have reached agreement on a programme of 702 redundancies to be implemented before July 31.

The new redundancy plans will reduce the workforce at BSC's Scunthorpe works to 8,914 against a total of almost 20,000 five years ago. As a result, unemployment among men in the town is expected to top 30 per cent.

Under the agreement signed by the Iron and Steel Trades Confederation, the main union, and a number of smaller unions, steelworkers are to be encouraged to take voluntary redundancy with an immediate pension at the age of 55 in the case of men and 50 in the case of women.

Scunthorpe's BSC works is expected to make a profit of £30m-£25m for the 1981-82 financial year.

GMWU ballot on Labour leader sought

BY JOHN LLOYD, LABOUR EDITOR

CALLS FOR membership before the block vote is cast for leader or deputy leader of the Labour Party are included in the preliminary agenda for the annual conference of the General and Municipal Workers Union in May.

Further motions regret the GMWU's executive decision to vote for Mr Denis Healey in the deputy leadership election last year, claiming that the vote did not reflect union policy.

A number of resolutions also express concern over the split in the Labour Party, and the Buxton branch calls for a vote of no confidence in the party "because it has disregarded its duty to the working class that it is representing during its time in opposition."

One motion calls for "serious and urgent consideration to any financial aid we may contemplate giving to the Labour Party because of the infiltration of the Militant Tendency, while another condemns the party's decision to conduct an inquiry into the far left group.

The sole motion on membership of the European Community could result in a switch in the union's position if it is debated. Last year the GMWU's switch from qualified support of the EEC to opposition was instrumental in swinging the TUC into an anti-EEC position.

The motion is proposed by

Oldham, which urges "that the next Labour government renegotiate new terms of membership of the EEC that will be of more benefit to the UK, or alternatively withdraw membership from the EEC."

If carried, the motion would bring the union to a broadly pro-EEC position and might have a similar effect on the TUC. A number of senior TUC figures have expressed doubts about the anti-European policy.

Bank union warns staff of new technology jobs threat

BY BRIAN GROOM, LABOUR STAFF

THE BANKING, Insurance and Finance Union is launching a spring campaign to alert workers to the dangers of redundancies resulting from the introduction of new technology on employers' terms.

The union's executive has agreed to advise members "when necessary" to obstruct the introduction of technology by employers who have refused

new technology agreements.

Bifu has met little success in persuading employers to sign agreements which would protect jobs from technological change, and give the union a substantial say in decisions on equipment.

The clearing banks, in particular, accuse Bifu of "scaremongering" about the employment effects of new technology, and believe that it is merely

trying to recruit by spreading fear.

Actual developments at a point-of-sales terminal in newly automated "in-store" banking, increasing numbers of auto-tellers, and "stand-alone" computers tend to dominate gatherings of union activists, but often meet apathy among staffs generally.

Mr Leif Mills, Bifu general secretary, said that while no specific flashpoints had yet arisen over new equipment, there had been concern over rationalisations linked to technological change.

Bifu cites job reductions at Midland Bank's head office, and redundancies at Lombard North Central, a National Westminster hire purchase and leasing company.

Call for equal pay laws to be strengthened

BY JOHN LLOYD, LABOUR EDITOR

A CALL for the strengthening of existing laws and greater union organisation to improve women's pay is made today by the Low Pay Unit.

The unit's report, Women: Work and Wages, says women earn less than 75 per cent of male average earnings for every hour worked. They comprise 90 per cent of the low-paid though they represent 30 per cent only of the paid workforce.

The report says the movement towards equal pay between 1970-76 has halted and in some cases been reversed in the past few years.

The report's authors base their findings on research done for the Employment Department in the 1970s. They say employers have been able to evade equal-pay laws by moving men or women out of jobs to avoid equal-pay comparisons.

It says the main reasons for low pay among women workers is that they are concentrated in the traditional low-wage industries or are in lower grades of better-paid sectors. Women

must often work part-time, or in high-turnover industries, to take time off for family responsibilities.

The authors say: "The removal of discriminatory practices or procedures alone is unlikely to lead to a significant reduction in job-segregation in the near future. Without more positive measures to overcome the effects of past discrimination and to break down the subtle barriers which limit women's opportunities at work, women are likely to remain among the low paid."

They propose: ● Strengthening existing laws, to promote positive action to break down the effects of past discrimination; ● A positive action, through programmes introduced by collective-bargaining and greater union organisation among women workers; and ● Extended parental leave, shorter hours, part-time working and job-sharing, and better day-care facilities for children.

Insurance staff vote today on 8% wage offer

By Our Labour Editor

LEGAL AND GENERAL staff vote today on an 8 per cent pay offer from the company which union officials have already rejected.

Mr James Terry, divisional officer for the Association of Scientific, Technical and Managerial Staffs, said last night that the offer was derisory and he expected overwhelming rejection. The union organises about half of L and G's 5,000 staff.

Mr Terry said company profits had risen by 36 per cent in the past year, and dividends paid to shareholders had risen by 44 per cent.

Perkins claim

SHOP STEWARDS representing 5,000 production workers at the Perkins diesel engine plant at Peterborough, Cambridgeshire, have demanded a 12 per cent pay rise. The increase would give £13 more a week to senior skilled men

BUSINESSMAN'S DIARY UK TRADE FAIRS AND EXHIBITIONS

Table with columns: Date, Title, Venue. Lists various trade fairs and exhibitions from April to May.

OVERSEAS TRADE FAIRS AND EXHIBITIONS

Table with columns: Date, Title, Venue. Lists international trade fairs and exhibitions in various global locations.

BUSINESS AND MANAGEMENT CONFERENCES

Table with columns: Date, Title, Venue. Lists various business and management conferences.

Anyone wishing to attend any of the above events is advised to telephone the organisers to ensure that there has been no change in the details published.

Financial Times Conferences

WORLD ELECTRONICS — The U.S., Japan and Europe: Competition or Collaboration? London — June 9 and 10, 1982

Japan's emergence as a major world force in electronics and the resulting reactions in the United States, long used to industry leadership, and in Europe are the main themes of this conference. Many vital issues of business strategy and public policy are raised by this conference with expert commentary by the impressive panel of speakers in government and the industry from Japan, the United States and Europe. They include Mr Gordon Moore, Chairman of the Board Intel Corporation; Mr Taiyu Kobayashi, Chairman of the Board Fujitsu Limited; Mr Lionel Olmer, the U.S. Under Secretary for International Trade; Mr Keiya Toyonaga, Adviser to MITI; Mr C. van der Klugt, Vice-Chairman of Philips Industries; and Sir Richard Cave, Chairman of Thorn EMI plc.

THE ECONOMICS OF NATURAL GAS DEVELOPMENT Venice — June 21 and 22, 1982

This important FT energy seminar, co-sponsored by Jensen Associates of Boston, is to be held in Venice immediately following the IGU meeting in Lausanne. The sponsors believe that the occasion will provide a unique opportunity to assess the future for gas in developing countries, and the programme will include speakers from Thailand and Mexico who will be outlining their development proposals. A special feature of the programme will be a presentation where the issues and constraints related to natural gas development will be considered by a panel of four speakers from the World Bank. Registrations will be limited.

All enquiries should be addressed to: The Financial Times Limited Conference Organisation, Minister House, Arthur Street, London EC4R 9AX. Tel: 01-621 1355. Telex: 27347 FTCONF G. Cables: FINCONF LONDON.

Volkswagen International Finance N.V. 7 3/4% US-S-Bonds of 1978/1985. Drawing of Bonds as per June 1, 1982. Includes details of bond terms and contact information.

London-Bahrain. Cathay Pacific advertisement featuring an image of a Cathay Pacific aircraft and text promoting daily daylight service. Includes contact information for travel agents.

TECHNOLOGY

EDITED BY ALAN CANE

Design and Manage is part of... Norwest Holst total capability 401-235 9951

Geoffrey Charlish on new moves to sighted robots in the factory

Vision from lab to shop floor

IF TOMORROW'S automation systems, ranging from robots to automatic inspection machines...

A number of research units in the UK are examining the problem and some of the work was discussed at a recent London conference...

In an article in Sensor Review not long ago, Professor Batchelor pointed out that although vision systems work in the laboratory...

Batchelor is trying to ease implementation by making industry more familiar with the possibilities. He has described the design of vision systems as "rather like making a choice from a Chinese menu"...

thresholds can be set so that a rather obscure crack in glassware can be "seen" in appropriate illumination and a reject mechanism actuated.

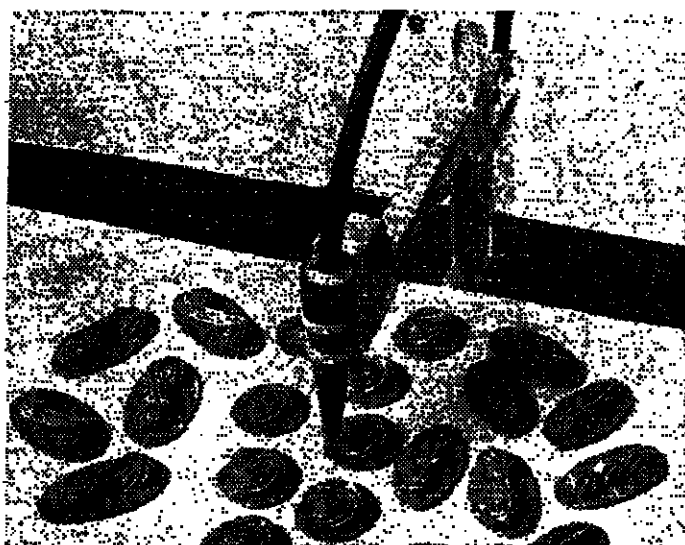
Almost any engineering or natural product can be looked at in this way—UWIST has even been asked to devise a foolproof method of categorising wine bottle corks according to the number and distribution of the spots.

By suitable computing, image edges can also be measured for straightness, radius of curvature or tilt from the vertical.

An unusual example of robot vision, developed by Patcentre of Cambridge was provided by A. J. Cronshaw. An (unnamed) confectionery manufacturer had the problem of applying lines, whisks, chevrons and other piped chocolate patterns to the top of chocolates on a conveyor belt.

The supposition, which proved correct, was that a small robot decorating arm would produce a more consistent result than a human operator.

A television camera is placed before the robot arm

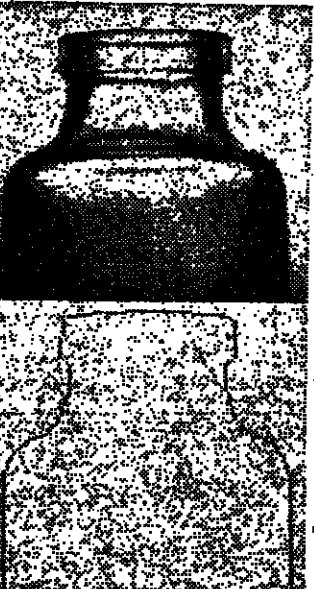


Based on analysed images from a TV camera placed further back down the line, this robot is able to decorate precisely the tops of chocolates—and get it right every time

over the conveyor. Each chocolate's image (there are eight types) is digitised and stored so that its location on the conveyor, its centre of area and the angle of its sides (if triangular or rectangular) or its major axis can all be computed from the stored data.

The data also defines the type of chocolate (say, a hazelnut whirl or a walnut truffle). The correct instructions can therefore be compiled rapidly and fed to the robot arm's drives. The arm goes to each chocolate and applies the right pattern precisely.

Ted Johnston, a consultant to Haden Drysds, described a system with a similar purpose, in this case the identification of large components suspended on a moving overhead conveyor. A vertical line scan of 128 pixels/line is used in 2 second sweeps across the image area, although the speed can be synchronised to the conveyor speed. Outline



By digitising the image of this bottle and processing it, a precise outline is obtained allowing profile measurements to be made

Photocells

At the conference he described some of the prospects for product inspection using, for example, processed images from monochrome line-scan cameras. These use a line of tiny photocells past which the product is moved, so that a point by point, line by line image is fed into a digital semiconductor store.

Having "captured" the image, it can be processed to reveal faults, dimensional errors and other features quite automatically; they can also be counted.

For example, grey-scale

shapes of each passing component are derived as a unique code that will then tell, say, a paint spraying robot what pattern of spraying to employ.

One of the applications tackled by British Robotic Systems required the visual system to recognise any one of about 5,000 small pieces of pipework and then present each of them on an indexing table to a robot. The robot correctly orients itself to grasp the item and presents it for several machining operations.

Justified

Peter Heywood of BRS emphasised that the robot or visual system alone could not be justified; together, they form a cost effective system with built-in flexibility for the future.

But there is a big difference, said Heywood, between what can be done in a laboratory and its practical realisation on the shop floor. Robustness is the key—of people and systems

Microwave link offers cheaper communications

THE HOME OFFICE has granted GE (U.S.A.) a demonstration licence for its Gemlink microwave fixed link equipment operating in the 21 to 23 GHz frequency band.

Equipment has been offered in this private users' band at various times but has not been cheap and has really only attracted users with large amounts of information to transmit.

GE (U.S.A.), by employing a solid-state Gunn diode oscillator as the microwave source and operating at low power has kept the cost down to £2,250 for a system that will transmit and receive at 9600 baud.

Using a straight receiver this gives a range of about 2 km, with the superhet version about 8 km. The equipment is small and unobtrusive; it weighs only 10 lb and looks a little like a spotlight. More sensitive receivers can be provided.

Two versions are designed at the moment, one intended for sending television channels (with slightly less range) and the 9600 baud unit for control/telemetry applications. This can accept four signal formats: tones, pulse width modulation, frequency shift keying and digital encoding. The company says it is



Testing a Gemlink system at GE's Owensboro, Kentucky, plant

offering these systems as a cost-effective alternative to dedicated lines and to other systems using lasers and infrared techniques.

At the moment, these bands are relatively uncluttered says GE. Since no cable is required, no wayleave problems exist so that in urban areas

point-to-point communications between the dishes, mounted on rooftops of business premises, opens up an interesting prospect, particularly in the banking and financial world.

In fact, the band will support about several hundred channels. Because the range is restricted to a few kilometres, presumably each town could use the same set of channels without mutual interference. Companies that at present have buildings in a town that talk to each other over dedicated phone lines (at less than 9600 baud capacity) might well find the system of interest at £2,250.

GE (U.S.A.) is working on a high speed data system that can handle multiplexed signals over a 2 km range. It will be available in the summer. Applications might include connection of remote terminals to mainframes in factory computer systems, or perhaps CAD, and use as a cost effective trunk line between private PABXs in different buildings. More on 01-402 4100.

Optical disc holds 1.25 gigabytes

USING THE Drexon "micro-hole" system of data recording, the Drexler Technology Corporation of Mountain View, California has designed an advanced optical memory disc, 12 inches across, that can hold 1.25 Gigabytes (billions of bytes, or words) of data on one side.

This is equivalent to the storage capacity of 50 14-inch, two-sided magnetic disc platters used in removable magnetic disc packs. However, it should

be borne in mind that the system is "read-only," in that once the data has been recorded it cannot be altered.

Basically the Drexon process records data instantly by laser beam melting of microscopically sized holes (up to five microns across) in an otherwise reflective surface.

The Drexon II process will be used for the new discs, in which the contrast of the holes to the reflective surface has been increased by 50 per cent and

signal-to-noise ratio improved. Faster, better defined lip-less holes have been achieved allowing coding to be varied by varying the spacing between the holes or by changing the lengths of the holes.

Drexler has already been offering disc products and these will now be available in Drexon 2, at prices 50 per cent below previous prices in most cases. Typically, the new price for 30 of the 300mm discs will be \$700 each compared with

\$1,400 each. The company says that the price could drop to \$100 when production volumes reach 100,000 discs annually.

Recently Drexler announced plans for a \$7.8m plant for expanded production. A new pilot facility will be established by the end of 1982, with an initial capacity of 1,000 discs a month, expandable ultimately to 10,000 per month as demand grows.

GEOFFREY CHARLISH

Surface checked by laser

LASERSURF, a development of Diffracto in Ontario, Canada, is being made available in the UK by Optical and Mechanical Development Company, Edenbridge, Kent (0732 864111).

CWO is an organisation set up by the Ministry of Housing and Reconstruction of the Arab Republic of Egypt to implement the Greater Cairo Wastewater Project, a major scheme for rehabilitating, augmenting and extending Cairo's wastewater system. Design work for the first stage of the project comprising tunnels, major pump stations, culverts and a treatment works all on the east bank of the River Nile and having a total estimated construction cost of about LE 800 million is now under way. Consulting Engineers for this work are AMERIC, a joint venture between UK firms Binnie & Partners and John Taylor & Sons and US Consultants Camp Dresser & McKee and Black & Veatch International (in association with Egyptian Consultants, Egecon). Foreign currency requirements for the first stage east bank work will be met from a £50 million grant from the British Government and a £100 million loan from the Midland Bank and Samuel Montagu & Co. Ltd, backed by ECGD.

It is envisaged that tenders will be invited later in the year for the manufacture, works testing, delivery, erection and commissioning, including training of operatives, of the undermentioned items of mechanical and electrical equipment for sewage applications. All associated motors, switchgear, cable starters, cabling and control gear will be included as appropriate with each item.

Item No. 1 — Rotodynamic Pumps in two Stations: Dry chamber uncheckable sewage pumping equipment, pipework, valves, penstocks, stairways, platforms, etc. 14 No — Units of capacities up to 3500 l/s each.

Item No. 2 — Archimedean Screw Pumps in eight Stations: Pumps, gearboxes, penstocks, etc. 70 No — Units of capacities up to 2350 l/s each.

Item No. 3 — Positive Displacement Pumps in three Stations: Reciprocating pumps, gearboxes, pipework, valves, platforms, etc. 30 No — Units of capacities up to 160 l/s each.

Items 4 to 11 below are required for a wastewater treatment plant of capacity 1,008,000 cmd (maximum throughput 1,700,000 cmd).

Item No. 4 — WWTP Inlet-Works Machinery Installation: Screens, detritors and all ancillary equipment. 24 No — Screen Units to pass average flow of 1.16m³/s each. 8 No — Grit collector units.

Item No. 5 — Primary Sedimentation Installation: Circular tank centre feed equipment and all ancillaries. 32 No.

Item No. 6 — Secondary Treatment Installation: Fixed surface aerators with draught-tubes, gearboxes, etc. 160 No — Units of 75 kW capacity each.

Item No. 7 — Final Settlement Installation: Circular tank centre feed equipment and all ancillaries. 32 No.

Item No. 8 — Chlorination Installation: Metering pumps, pipework, injection equipment, etc. 2 No — Sets of equipment each of 22,500 kg/d capacity.

Item No. 9 — Sludge Thickening Installation: Circular tank centre feed equipment and all ancillaries. 24 No — Units to pass average flow of 3300 cmd each.

Item No. 10 — WWTP Electrical Power Distribution Installation: HV switchgear, transformers, LV switchgear, standby generator, cabling, etc. for total installed capacity of 30 MW. 4 No — 4 MW sub-station installation each. 2 No — 2 MW sub-station installation each.

Item No. 11 — Instrumentation and Control Installation: Centralised monitoring equipment for process and plant.

Interested suppliers or manufacturers or groups of suppliers or manufacturers are invited to express interest and to provide the following detailed information:

(a) Item(s) for which they wish to tender;

(b) capability to supply the plant and equipment indicated;

(c) previous contracts of similar nature and size undertaken by the company or group of companies; and

(d) the financial standing of company or group of companies.

Details should be submitted not later than 30th April 1982 to:

AMERIC, P.O. Box 2365, Ataba Square, Cairo, ARE.

and copied to:

Taylor Binnie & Partners, Floor 2, Greycoat House, 10 Greycoat Place, London, SW1P 1SB

A further copy should be sent to P.O. Box 2365, Ataba Square, Cairo, ARE, marked for Chairman A. Safwat, CWO.

CONTRACTS AND TENDERS ADVERTISING APPEARS EVERY MONDAY. THE RATE IS £27.50 PER SINGLE COLUMN CENTIMETRE.

CONTRACTS AND TENDERS

ARAB REPUBLIC OF EGYPT GREATER CAIRO WASTEWATER PROJECT SUPPLY OF MECHANICAL AND ELECTRICAL PLANT AND EQUIPMENT

The Organisation for the Execution of the Greater Cairo Wastewater Project (CWO) invites British manufacturers and suppliers of mechanical and electrical equipment to express interest in tendering for the Greater Cairo Wastewater Project.

CWO is an organisation set up by the Ministry of Housing and Reconstruction of the Arab Republic of Egypt to implement the Greater Cairo Wastewater Project, a major scheme for rehabilitating, augmenting and extending Cairo's wastewater system. Design work for the first stage of the project comprising tunnels, major pump stations, culverts and a treatment works all on the east bank of the River Nile and having a total estimated construction cost of about LE 800 million is now under way. Consulting Engineers for this work are AMERIC, a joint venture between UK firms Binnie & Partners and John Taylor & Sons and US Consultants Camp Dresser & McKee and Black & Veatch International (in association with Egyptian Consultants, Egecon). Foreign currency requirements for the first stage east bank work will be met from a £50 million grant from the British Government and a £100 million loan from the Midland Bank and Samuel Montagu & Co. Ltd, backed by ECGD.

It is envisaged that tenders will be invited later in the year for the manufacture, works testing, delivery, erection and commissioning, including training of operatives, of the undermentioned items of mechanical and electrical equipment for sewage applications. All associated motors, switchgear, cable starters, cabling and control gear will be included as appropriate with each item.

Item No. 1 — Rotodynamic Pumps in two Stations: Dry chamber uncheckable sewage pumping equipment, pipework, valves, penstocks, stairways, platforms, etc. 14 No — Units of capacities up to 3500 l/s each.

Item No. 2 — Archimedean Screw Pumps in eight Stations: Pumps, gearboxes, penstocks, etc. 70 No — Units of capacities up to 2350 l/s each.

Item No. 3 — Positive Displacement Pumps in three Stations: Reciprocating pumps, gearboxes, pipework, valves, platforms, etc. 30 No — Units of capacities up to 160 l/s each.

Items 4 to 11 below are required for a wastewater treatment plant of capacity 1,008,000 cmd (maximum throughput 1,700,000 cmd).

Item No. 4 — WWTP Inlet-Works Machinery Installation: Screens, detritors and all ancillary equipment. 24 No — Screen Units to pass average flow of 1.16m³/s each. 8 No — Grit collector units.

Item No. 5 — Primary Sedimentation Installation: Circular tank centre feed equipment and all ancillaries. 32 No.

Item No. 6 — Secondary Treatment Installation: Fixed surface aerators with draught-tubes, gearboxes, etc. 160 No — Units of 75 kW capacity each.

Item No. 7 — Final Settlement Installation: Circular tank centre feed equipment and all ancillaries. 32 No.

Item No. 8 — Chlorination Installation: Metering pumps, pipework, injection equipment, etc. 2 No — Sets of equipment each of 22,500 kg/d capacity.

Item No. 9 — Sludge Thickening Installation: Circular tank centre feed equipment and all ancillaries. 24 No — Units to pass average flow of 3300 cmd each.

Item No. 10 — WWTP Electrical Power Distribution Installation: HV switchgear, transformers, LV switchgear, standby generator, cabling, etc. for total installed capacity of 30 MW. 4 No — 4 MW sub-station installation each. 2 No — 2 MW sub-station installation each.

Item No. 11 — Instrumentation and Control Installation: Centralised monitoring equipment for process and plant.

Interested suppliers or manufacturers or groups of suppliers or manufacturers are invited to express interest and to provide the following detailed information:

(a) Item(s) for which they wish to tender;

(b) capability to supply the plant and equipment indicated;

(c) previous contracts of similar nature and size undertaken by the company or group of companies; and

(d) the financial standing of company or group of companies.

Details should be submitted not later than 30th April 1982 to:

AMERIC, P.O. Box 2365, Ataba Square, Cairo, ARE.

and copied to:

Taylor Binnie & Partners, Floor 2, Greycoat House, 10 Greycoat Place, London, SW1P 1SB

A further copy should be sent to P.O. Box 2365, Ataba Square, Cairo, ARE, marked for Chairman A. Safwat, CWO.

CONTRACTS AND TENDERS ADVERTISING APPEARS EVERY MONDAY. THE RATE IS £27.50 PER SINGLE COLUMN CENTIMETRE.

SOMALI DEMOCRATIC REPUBLIC MOGAMBO IRRIGATION PROJECT

CONTRACT NR. M2 IRRIGATION, DRAINAGE AND FLOOD PROTECTION WORKS PREQUALIFICATION AND REGISTRATION OF PROSPECTIVE TENDERS

The Mogambo Irrigation Project will develop irrigated agriculture over a net area of about 2200 ha using water abstracted from the Jubba River and forms part of a proposed ultimate development of some 8000 ha. The construction of most of the works will be the subject of international competitive tendering under the terms of agreements for financial aid negotiated between the Somali Democratic Republic, the Kuwait Fund for Arab Economic Development and the Kreditanstalt für Wiederaufbau, Building and Services associated with the Project are to be the subject of an advance Contract to be advertised in Somalia shortly.

The tender documents are in the course of preparation for this contract, which will be let to a prequalified tenderer with a view to construction commencing early in 1983. The Works generally comprise:

- (a) Supply canal and distributory canal system to supply the irrigated areas. (b) Pump station at the head of the supply canal. (c) Canal structures including siphons under the Galib/Kiamayy road and the flood relief channel, cross regulators, distributory cutovers, escapes and other canal structures. (d) Inlet works comprising water courses and associated structures, land forming, surface drains, and surface drain cutovers. (e) Drainage channel system comprising outfall drain and main collector drains. (f) Drainage pump station. (g) Drain structures including road cutovers, collector drain junctions and all other drain structures. (h) Spring/pump station together with distribution system. (i) Flood protection bunds and remodelling of existing flood relief channels.

The supply and supervision of erection of the pumping plant and gates and other water control equipment will be the subject of nominated sub-contracts.

PREQUALIFICATION OF TENDERS

Contractors who wish to be prequalified for the above Contract should submit their names and addresses to be received by the Consultant before 1st May 1982. They will be sent further information about the Contract and requests for the information needed in the prequalification procedure.

CONSULTANT

The Consultant, to whom applications for prequalification and registration should be sent, is:

SIR M. MACDONALD & PARTNERS, DEMETER HOUSE, STATION ROAD, CAMBRIDGE, ENGLAND.

UNITED KINGDOM

who will acknowledge all applications and, in due course, supply further particulars.

LANGUAGE

Submissions of original documents or copies thereof, which are not in English, should be accompanied by English translation.

Signed: THE GENERAL MANAGER, MOGAMBO IRRIGATION PROJECT, P.O. BOX 100, MOGADISHU, SOMALI DEMOCRATIC REPUBLIC

INTERBASE E.P. An Enterprise of the ownership of the Republic of Cape Verde, has received loans from the following sources:

- SAUDI FUND FOR DEVELOPMENT
— ARAB BANK FOR ECONOMIC DEVELOPMENT IN AFRICA
— ABU DHABI FUND

Such loans are for development towards the cost of a fishing project, and it is intended that proceeds of these loans will be applied to payment under contracts for which this invitation for prequalification is issued.

The tender for which prequalification is now laid open comprises the supplying of:

- 12 STEEL HULL TUNA BOATS, 14-18 METRES LONG, WITH 220 HP ENGINE, EQUIPPED WITH GEARS FOR POLE AND LINE FISHING, AND BAT CATCHING AS WELL.

Candidates must send applications for prequalifications to:

INTERBASE E.P., P.O. BOX 59, MINDELO, REPUBLIC OF CAPE VERDE (TELEX NR 993-84 INTER SV CV)

Within 30 days after this invitation is made public, applications must be presented and completed with good documents to corroborate (documents must be sent in duplicate):

- (1) Candidate's experience and past performance.
(2) His capabilities with respect to personnel, equipment and plant.
(3) His financial position.

When you need a new building, you have a choice...

Advertisement for Walter Lawrence Construction Ltd. featuring a photograph of a man in a suit and the text 'This or this' and 'a good site better'.

Advertisement for Dunlop Semtex Carpeting and Specialist Flooring, featuring the text 'NATIONWIDE Consult 01-902 9441 Contract Service Division'.

Advertisement for PERA about TRAINING for Stock Controllers, featuring the text 'The big pharmaceutical people do!' and contact information for PERA TRAINING.

Membran builds a faster tester

SPEED, CAPACITY and versatility are the keynotes of a new printed circuit board tester from Membran, the MS 3323. The company's previous hybrid tester (that is, a machine able to cope with both computer-like digital circuits and analogue circuits of the kind found in telephony and radio), could offer 1199 digital test points and a further 327 for analogue work. The testing rate for digital patterns was 500 kHz.

In the new machine these three key figures have been raised to 2292, 859 and 2 MHz respectively.

The machine, like its predecessor, is an "in-circuit" tester. Via a "bed of nails" contact platen the interconnections on either assembled or bare boards can be checked, verifying that the correct components have been fitted and properly oriented. Computer diagnosis identifies incorrect components and tracks.

Such a test ensures that, if powered up the board will not be damaged. Then, tests with power on can check that each active device functions correctly.

FT Monthly Survey of Business Opinion

© Statistical Material Copyright Taylor Nelson Group Ltd.

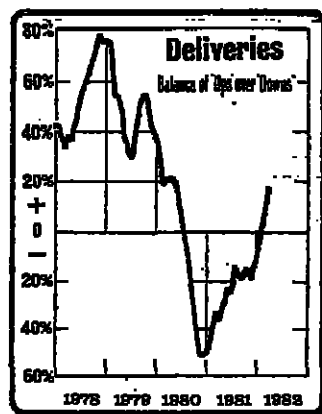
GENERAL OUTLOOK

Outlook more optimistic

CONFIDENCE about the general business situation showed a significant improvement in March, and a higher balance of those surveyed were optimistic about the future than at any time since the start of the recession.

The three sectors surveyed during the month—construction and building, food and tobacco, and textiles and clothing—were all more optimistic than when the companies were last interviewed in November. The moderately improved prospects for growth and for lower interest rates were among general factors cited.

Most of the companies were interviewed before the Budget, but in follow-up interviews, they expressed generally favourable



but unexcited reactions to the Chancellor's measures. The bad

weather during the winter months was a dampening effect on the optimism of some companies, and in the construction industry, the continued restraint on government spending and the low level of housing starts was to be seen as a restraining factor.

The general level of optimism shown by the survey fell back during the summer and autumn of last year after a steady improvement from a very low level in the depths of the recession in the summer of 1980. Since last autumn, however, there has been a sustained improvement with a balance of 30 per cent of respondents saying they were more optimistic than they were four months

GENERAL BUSINESS SITUATION

Are you more or less optimistic about your company's prospects than you were four months ago?

	4 monthly moving total				March 1982		
	Dec. %	Nov. %	Oct. %	Sept. %	Constn. & Bldg.	Food & Textiles & Clothing	%
More optimistic	50	46	34	30	74	47	77
Neutral	30	32	44	48	24	44	23
Less optimistic	20	22	22	22	0	9	0

EXPORT PROSPECTS (Weighted by exports)

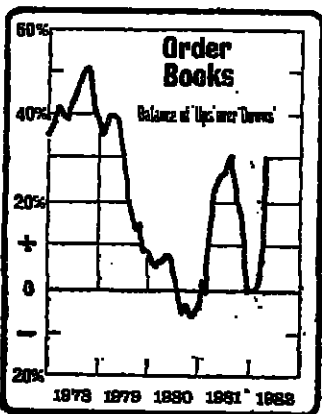
Over the next 12 months exports will be:

	4 monthly moving total				March 1982		
	Dec. %	Nov. %	Oct. %	Sept. %	Constn. & Bldg.	Food & Textiles & Clothing	%
Higher	83	77	72	63	50	41	100
Same	8	11	14	24	37	35	0
Lower	8	12	11	12	14	12	0
No answer	1	0	2	2	0	12	0

ORDERS AND OUTPUT

Signs of improvement

THE THREE sectors surveyed this month indicate an improvement in new orders and order books compared with four months ago. The severely depressed construction and building sector has finally started to expect an improvement in the level of housebuilding, the number of housing starts in 1981 having plummeted to the lowest level since the war. Last November none of the companies interviewed in all three sectors expected their order books to improve in the following four months. This time 17 companies were expecting expansion in their order books, resulting in the greatest improvement in this index since



September 1972. Nearly three times as many companies expected their turnover to rise by 2.5 per cent or more in the next 12 months as had given this answer in November. Again, the building and construction industry is more optimistic because of signs that housebuilding is on the way up again. Some of the companies were re-interviewed after the Budget and publication of the Public Expenditure White Paper. A quarter of them increased their expectations of increased turnover. The optimism was helped by a general feeling that interest rates would fall further in the near future.

NEW ORDERS

The trend of new orders in the last four months was:

	4 monthly moving total				March 1982		
	Dec. %	Nov. %	Oct. %	Sept. %	Constn. & Bldg.	Food & Textiles & Clothing	%
Up	38	33	26	16	31	14	26
Same	30	30	37	38	40	44	35
Down	18	17	20	27	29	22	23
No answer	14	20	17	19	0	20	16

PRODUCTION/SALES TURNOVER

Those expecting production/sales turnover in the next 12 months:

	4 monthly moving total				March 1982		
	Dec. %	Nov. %	Oct. %	Sept. %	Constn. & Bldg.	Food & Textiles & Clothing	%
Rise over 20%	3	3	1	1	3	0	0
Rise 15-19%	1	3	2	2	0	0	0
Rise 10-14%	10	7	8	5	37	0	0
Rise 5-9%	22	21	20	20	24	25	49
Rise 2.5-4%	25	23	20	18	3	50	47
Remain the same	31	37	40	44	3	24	3
Fall 2.5-4%	6	5	5	8	22	0	0
Fall 5-9%	0	2	2	2	0	0	0
Fall 15% or more	1	0	0	0	7	0	0
Median	3.7	3.2	2.8	2.0	8.1	3.8	5.0

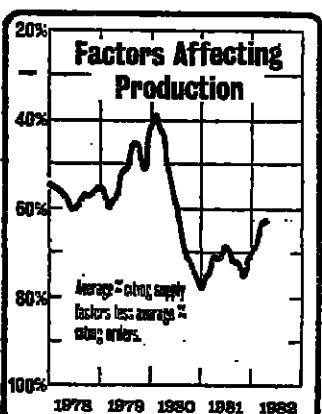
CAPACITY AND STOCKS

Output level improves

THE INDICATOR measuring the percentage of companies working at planned output levels or above continued to improve last month, reflecting industry's general improvement in confidence.

Both the building and construction and the food and tobacco sectors reported more favourable capacity working than when last surveyed in November. Another sign of confidence came from the improvement in the number of companies saying they could plan more than six months ahead with reasonable accuracy.

Respondents' answers to questions about stocks was mixed.



The textiles and clothing sectors expected stocks of all kinds to increase while the building and construction industry expected them to fall. There was therefore little change in the indices governing the volume of work in progress or stocks of raw materials and components. However, the food sector was prepared to increase stocks of raw materials and components. This index is a measure of the volume of work in progress or stocks of raw materials and components. However, the food sector was prepared to increase stocks of raw materials and components. This index is a measure of the volume of work in progress or stocks of raw materials and components.

STOCKS

Raw materials and components over the next 12 months will:

	4 monthly moving total				March 1982		
	Dec. %	Nov. %	Oct. %	Sept. %	Constn. & Bldg.	Food & Textiles & Clothing	%
Increase	25	24	31	23	24	19	81
Remain the same	52	53	44	54	36	56	3
Decrease	22	19	21	20	40	25	16
No answer	2	2	4	3	0	0	0

Manufactured goods over the next 12 months will:

	4 monthly moving total				March 1982		
	Dec. %	Nov. %	Oct. %	Sept. %	Constn. & Bldg.	Food & Textiles & Clothing	%
Increase	24	18	18	14	24	25	55
Remain the same	43	48	44	50	44	42	22
Decrease	21	18	21	21	25	13	14
No answer	1	3	5	4	0	0	0
Not applicable	12	13	12	10	7	0	7

FACTORS CURRENTLY AFFECTING PRODUCTION

Are any of the following factors limiting your output at present?

	4 monthly moving total				March 1982		
	Dec. %	Nov. %	Oct. %	Sept. %	Constn. & Bldg.	Food & Textiles & Clothing	%
Home orders	87	86	89	92	93	87	89
Export orders	49	50	55	55	53	45	58
Executive staff	1	2	2	1	0	0	0
Skilled factory staff	6	3	2	4	15	6	11
Components	2	2	3	1	1	0	0
Raw materials	4	0	0	1	15	13	0
Production capacity (plant)	6	7	4	3	0	6	26
Finance	1	1	0	0	0	0	0
Labour disputes	6	4	2	2	0	13	0
Others	21	21	21	20	15	9	0
No factors	4	8	8	5	7	0	0

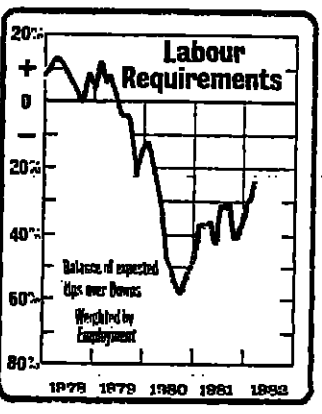
INVESTMENT AND LABOUR

Some increased investment seen

THERE WAS a generally increased tendency among those surveyed to say that they would be increasing capital expenditure. All three of the sectors interviewed in March were less inclined to say that they expected the proportion of capital expenditure spent overseas to increase, or they were more inclined to say it would decrease. This indicator has therefore fallen quite sharply.

A general tendency to say that capital expenditure would increase has been evident from about the turn of the year. This reflects the pattern of general business optimism shown by the survey.

There was a continued in-



crease in the tendency for companies to say they expected to take on more labour, particularly in the construction sector. However, some construction companies said uncertainty about whether the recession had really come to an end was discouraging them from taking on extra workers.

The reduction of the employers' National Insurance Surcharge in the Budget does not appear to have given companies a great incentive to take on extra labour. There is still a balance of 25 per cent of companies saying they expect to reduce labour requirements, but this negative balance has been declining since last autumn.

LABOUR REQUIREMENTS (Weighted by employment)

Those expecting their labour force over the next 12 months to:

	4 monthly moving total				March 1982		
	Dec. %	Nov. %	Oct. %	Sept. %	Constn. & Bldg.	Food & Textiles & Clothing	%
Increase	17	13	12	8	26	3	45
Stay about the same	42	45	44	47	50	49	0
Decrease	41	42	43	45	24	47	55

CAPITAL INVESTMENT (Weighted by capital expenditure)

Those expecting capital expenditure over the next 12 months to:

	4 monthly moving total				March 1982		
	Dec. %	Nov. %	Oct. %	Sept. %	Constn. & Bldg.	Food & Textiles & Clothing	%
Increase in volume	41	34	25	23	54	36	64
Increase in value but not in volume	9	11	9	12	3	12	0
Stay about the same	20	23	20	22	13	41	20
Decrease	29	31	42	40	28	12	15
No answer	1	2	3	3	0	0	0

COSTS AND PROFIT MARGINS

Mixed pattern in wage demands

THE BUILDING and textile sectors are expecting greater increases in wages than they had done in November but food and tobacco companies reduced their wage increase

expectations. Determination to resist wage increases in excess of the amount budgeted remains quite strong although there is greater willingness to negotiate a shorter working week. More companies would like to pay increased differentials to groups of employees although the majority think they have already established or re-established suitable differentials.

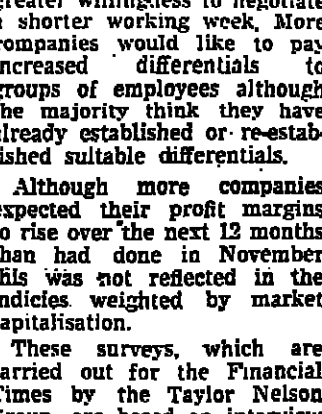
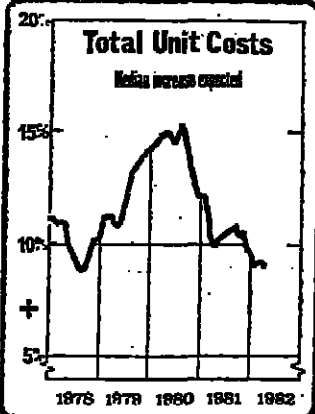
Although more companies expected their profit margins to rise over the next 12 months than had done in November this was not reflected in the indices weighted by market capitalisation.

These surveys, which are carried out for the Financial Times by the Taylor Nelson Group, are based on an interview with senior executives. The 11 industrial sectors (mechanical engineering is surveyed every second month). Complete tables can be purchased from Taylor Nelson and Associates.

tobacco group giving reduced expectations. Determination to resist wage increases in excess of the amount budgeted remains quite strong although there is greater willingness to negotiate a shorter working week. More companies would like to pay increased differentials to groups of employees although the majority think they have already established or re-established suitable differentials.

Although more companies expected their profit margins to rise over the next 12 months than had done in November this was not reflected in the indices weighted by market capitalisation.

These surveys, which are carried out for the Financial Times by the Taylor Nelson Group, are based on an interview with senior executives. The 11 industrial sectors (mechanical engineering is surveyed every second month). Complete tables can be purchased from Taylor Nelson and Associates.



These surveys, which are carried out for the Financial Times by the Taylor Nelson Group, are based on an interview with senior executives. The 11 industrial sectors (mechanical engineering is surveyed every second month). Complete tables can be purchased from Taylor Nelson and Associates.

COSTS

Wages rise by:

	4 monthly moving total				March 1982		
	Dec. %	Nov. %	Oct. %	Sept. %	Constn. & Bldg.	Food & Textiles & Clothing	%
0-4%	2	2	2	4	7	3	0
5-9%	86	80	80	75	56	94	100
10-14%	12	16	14	13	36	1	0
15-19%	0	0	0	0	0	0	0
20-24%	0	0	0	0	0	0	0
25-29%	0	0	0	0	0	0	0
30-34%	0	0	0	0	0	0	0
35-39%	0	0	0	0	0	0	0
40-44%	0	0	0	0	0	0	0
45-49%	0	0	0	0	0	0	0
50-54%	0	0	0	0	0	0	0
55-59%	0	0	0	0	0	0	0
60-64%	0	0	0	0	0	0	0
65-69%	0	0	0	0	0	0	0
70-74%	0	0	0	0	0	0	0
75-79%	0	0	0	0	0	0	0
80-84%	0	0	0	0	0	0	0
85-89%	0	0	0	0	0	0	0
90-94%	0	0	0	0	0	0	0
95-99%	0	0	0	0	0	0	0
100% or more	0	0	0	0	0	0	0
No answer	16	17	17	14	22	19	0

Unit costs rise by:

	4 monthly moving total				March 1982		
	Dec. %	Nov. %	Oct. %	Sept. %	Constn. & Bldg.	Food & Textiles & Clothing	%
0-4%	6	2	2	3	0	28	15
5-9%	39	40	40	39	25	52	38
10-14%	35	36	32	36	52	1	32
15-19%	0	0	0	0	0	0	0
20-24%	0	0	0	0	0	0	0
25-29%	0	0	0	0	0	0	0
30-34%	0	0	0	0	0	0	0
35-39%	0	0	0	0	0	0	0
40-44%	0	0	0	0	0	0	0
45-49%	0	0	0	0	0	0	0
50-54%	0	0	0	0	0	0	0
55-59%	0	0	0	0	0	0	0
60-64%	0	0	0	0	0	0	0
65-69%	0	0	0	0	0	0	0
70-74%	0	0	0	0	0	0	0
75-79%	0	0	0	0	0	0	0
80-84%	0	0	0	0	0	0	0
85-89%	0	0	0	0	0		

FINANCIAL TIMES SURVEY

Monday April 5 1982

Electronic Components

The electronic components industry is performing well despite the recession. The U.S. domination of the industry has been seriously challenged by Japan while West European countries still lag behind. Developments in technology show no signs of slowing down during the next few years

Horizons widen for new markets

By ELAINE WILLIAMS

MEASURED AGAINST the backdrop of the world recession, the electronics industry growth is still impressive. It has managed to maintain a growth rate of about 11 per cent a year in the 1980s at a time when other industries have declined sharply. It continues to make strides in technology—some of which will be shown at the All Electronics Show at the Barbican later this month—and many new markets are opening in areas such as telecommunications. Industry and commerce have realised that electronics equipment is vital to maintain a competitive edge or simply to survive the cold wind of the recession.

The computer industry still represents the largest customer for the electronic components industry taking about 25 per cent of the total production of integrated circuits. Within this sector the fastest growing segment is small computers which find applications as personal business machines or are integrated as part of other industrial or commercial systems. These small desk-top sized computers are linked to the growing interest in office automation which is mainly centred around word processing systems. At present, the market penetration of word processing systems is relatively small but is estimated to be growing at a rate of more than 20 per cent a year reaching a value for Western world word processing equipment of \$5.33bn by 1985. Coupled with the evolution in the office is the increased demand for telecommunications, resulting in another growth sector for electronic components. The western world is now going through a transition from outdated electromechanical telephone systems to completely electronic ones.

More components

This is also opening up new markets in data communications equipment, connections to computer systems and new telephone gadgets, all of which need components. Despite the recession throughout industry, the demand for applying electronics to automatic industrial processes is increasing. Companies have realised that robots and other automated production systems are vital to increase productivity and lower costs. In Europe industrial applications for electronics represents one of the largest sectors for the industry and is growing

at an annual rate of about 12 per cent. The market for consumer electronics is not growing as fast as some other sectors because of the recession. Consumer goods such as calculators and digital watches seem to be levelling off in sales although video games and home video systems still show substantial growth.

The introduction of the first microprocessor—a computer on a chip—in the early 1970s marked a new phase in both electronics and computing. It lowered the cost of computing to a level where it could be employed in almost any application imaginable.

Hence its appearance in equipment as diverse as electronic games, aircraft navigation systems, aids for the disabled, heart pacemakers and industrial controls.

Technical developments over the next few years will continue to centre on squeezing more individual components on to the tiny square of silicon probably going beyond 1m elements per silicon chip, this decade.

Microprocessors will become more complex and be able to store more data on the same chip instead of requiring a separate memory circuit—making it truly a complete computer on a silicon chip. Today the largest semiconductor memories—used for storing large amounts of information—are capable of holding 64,000 bits of information. Semiconductor companies are now set to leap to memories capable of handling four times that amount of information. Designers are already reaching the limits of existing semiconductor production technology

which is based on photolithography—a highly sophisticated photographic process.

Integrated circuits are built up in layers on the silicon base. Parts of the silicon is etched away by acids while other areas are implanted with impurities to give the circuits the required electrical characteristics.

Optical methods

Today each layer is aligned above the previous one using optical methods. However, if circuits are to become more complex the size of each individual transistor or element has to shrink below the size at which the optical methods are accurate. So companies are now looking at ways of using X-rays or electron beams to build up the circuits.

Although the market for electronic components is growing at a healthy rate, it costs a lot of money to keep in the semiconductor race. Technological developments are moving ahead so fast that companies need to

re-equip constantly with the latest design and production equipment.

The complexity of modern silicon chips means that it is impossible to design them without the aid of sophisticated computers and a factor limiting the expansion of production facilities has often been the delay in deliveries of the latest machinery to make the circuits.

The ratio of investment to total turnover in the industry has risen from 10 per cent to more than 15 per cent which is higher than in any other industrial sector.

If we consider Impos, for example, the UK semiconductor company set up under the former National Enterprise Board, it has required an investment of over \$50m to begin manufacture of its microprocessors and other circuits and still needs more money if it is to keep abreast of developments.

It has been estimated that the seven leading U.S. companies in this field spent about

\$900m in 1980 on new equipment which was 40 per cent more than the previous years.

Industry observers feel that such costs coupled with the intense competition in the market will encourage an acceleration of mergers and takeovers which has been a feature of the industry over the past five years or so.

This, observers say, will lead to the emergence of a dozen or so electronics giants—rather like the seven major oil companies—which could control as much as 60 per cent of the worldwide electronics market.

For some years now a number of industrial groups have shown the potential to be classed as prototypes of these giants. Apart from IBM, which has already achieved such status, AT & T in the U.S., Philips and Siemens in Europe, Toshiba, NEC and Hitachi in Japan have the structural characteristics which could one day set them on this level.

However, many multinationals such as oil giant Exxon, Honeywell, and United Technologies are among companies which have taken over electronics concerns because of the industry's growing importance.

Governments, too, have felt the need to influence the direction of national electronics industries. Several Western European countries have mounted programmes aimed at closing the technology gap with the U.S. and Japan.

Initiatives include plans in Germany to support semiconductor research and development providing grants of DM 143m (£33.26m) from 1978 to 1981. The German Government is now considering a further injection of money.

In France efforts have been aimed at creating a strong indigenous electronics components industry with state investment of FF 600m (£33.82m). Joint ventures with U.S. companies such as Motorola and Harris and National Semiconductor have also been encouraged.

In the UK more than £120m has been dedicated to industry support programmes apart from the money spent on setting up the Immos venture. According to the Electronic Components Industry Federation there is also state support for specific components such as optoelectronics and a rationalisation of industry sectors such as resistors to increase competitiveness.

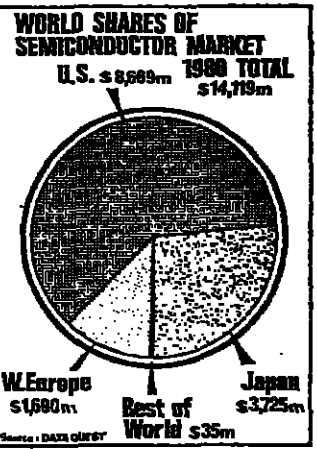
But both the U.S. and Japan, which emerged from a four-year catching up exercise in 1980, are now poised to take a further technological leap. U.S. companies have found a measure of support for developments, under the U.S. defence spending budget through the very high speed integrated circuits programme.

MITI guidance

Meanwhile, Japan's private companies are being guided by the Ministry of International Trade and Industry (MITI), to produce the fifth generation of computers over the next decade.

Even Third World countries such as Taiwan, Singapore and Hong Kong, which concentrate on consumer products, are looking to improve their technology base.

Taiwan and Korea were attractive as offshore assembly locations for integrated circuit manufacturers because of cheap labour.

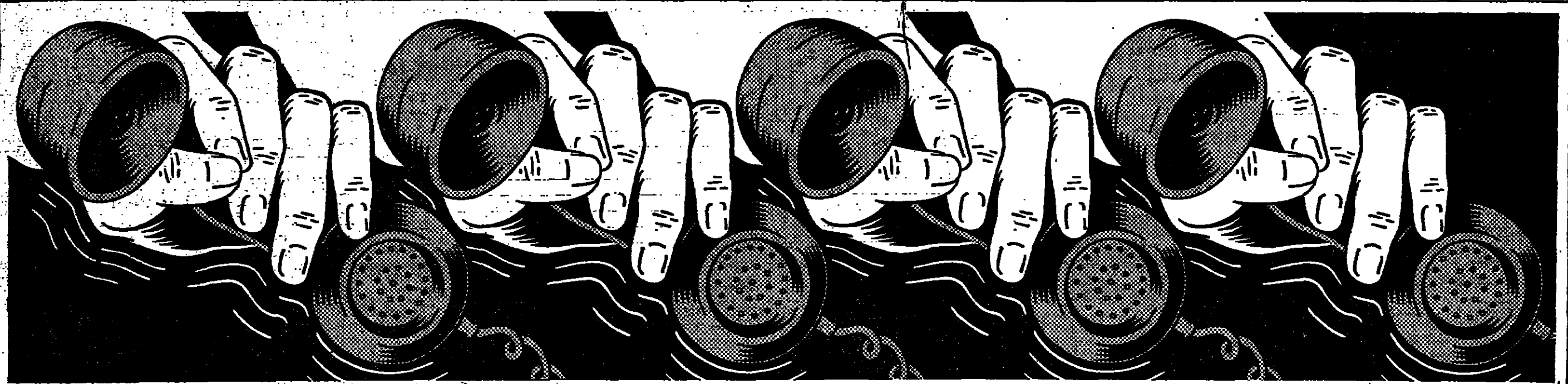


CONTENTS

Japan v U.S.	II
Transducers	II
European competition	III
Consumer viewpoint	IV
Captive suppliers	IV
Materials technology	V
Custom circuits	V
Developments	V
Design and testing	VI
Electronic defence	VI
Profiles: Motorola; National Semiconductor; Immos	II
Ferranti; Plessey; Intel; GEC; Fairchild	III
Thomson-CSF; Fujitsu	IV
AMI	V
Siemens; IIT; Texas Instruments	VI

LEADING MANUFACTURERS OF SEMICONDUCTORS

(1980 shipment estimates)					
West European	U.S.	(\$m)	Japanese		
Philips	558	Texas Instrts.	1,580	NEC	769
Siemens	420	Motorola	1,100	Hitachi	658
ABG-Telefun	196	National Semi.	770	Toshiba	629
Thomson-CSF	190	Intel	575	Fujitsu	419
SGS-Ates	150	Fairchild	566	Matsushita	300
Plessey	49	Signetics	384	Mitsubishi	254
Ferranti	48	Mostek	330	Sanyo	180
Excluding U.S. subsidiaries.		Source: Dataquest, July 1981.			



YOU GET A BETTER DEAL WHEN YOU TALK TO US.

You get the best of both worlds. You get the dedication of small companies to quality, to on time deliveries, to competitive prices. You get the resources and professionalism that can only come from a leader in the electronic components industry. We've already supplied over six million call register meters and twenty million coaxial connectors to the telecoms industry, fifteen million fibre mouldings to the T.V. industry and millions more components to other industries. We're even reversing an industry trend. We're actually exporting insulation displacement connectors! So if you want big company backing and small company merits, talk to a Unitech company.

UNITECH
COMPONENT MANUFACTURING DIVISION

H&T COMPONENTS LTD
Dunbeath Road, Swindon, Wiltshire, SN2 6EA. Tel (0793) 693681
Managing Director: Mr. J. Jeffrey

INSULATION DISPLACEMENT CONNECTORS, TERMINAL BLOCKS, PRECISION PLASTIC MOULDINGS.

FIBRE RESIN DEVELOPMENTS LTD
FOGG LOUDSPEAKER COMPONENTS LTD
Kingston Road, East Cowes, Isle of Wight, PO32 6EY. Tel (0983-292601)
Managing Director: Mr. J. Hand

FIBRE MOULDINGS FOR THE TV, SPEAKER AND MOTOR INDUSTRIES.

LEE GREEN PRECISION INDUSTRIES LTD
FIBRE LINK LTD
Grotes Place, Blackheath, London, SE3 0RA. Tel 01-852 2203
Managing Director: Mr. H. de Forges

RF & OPTICAL FIBRE CONNECTORS.

RATHDOWN INDUSTRIES LTD
17 London Road, Ascot, Berkshire, SL5 7EP. Tel 0990-23400
Managing Director: Mr. D. Fewings

TELECOMMUNICATION PRODUCTS.

INDIVIDUAL FLAIR—BIG COMPANY RESOURCES

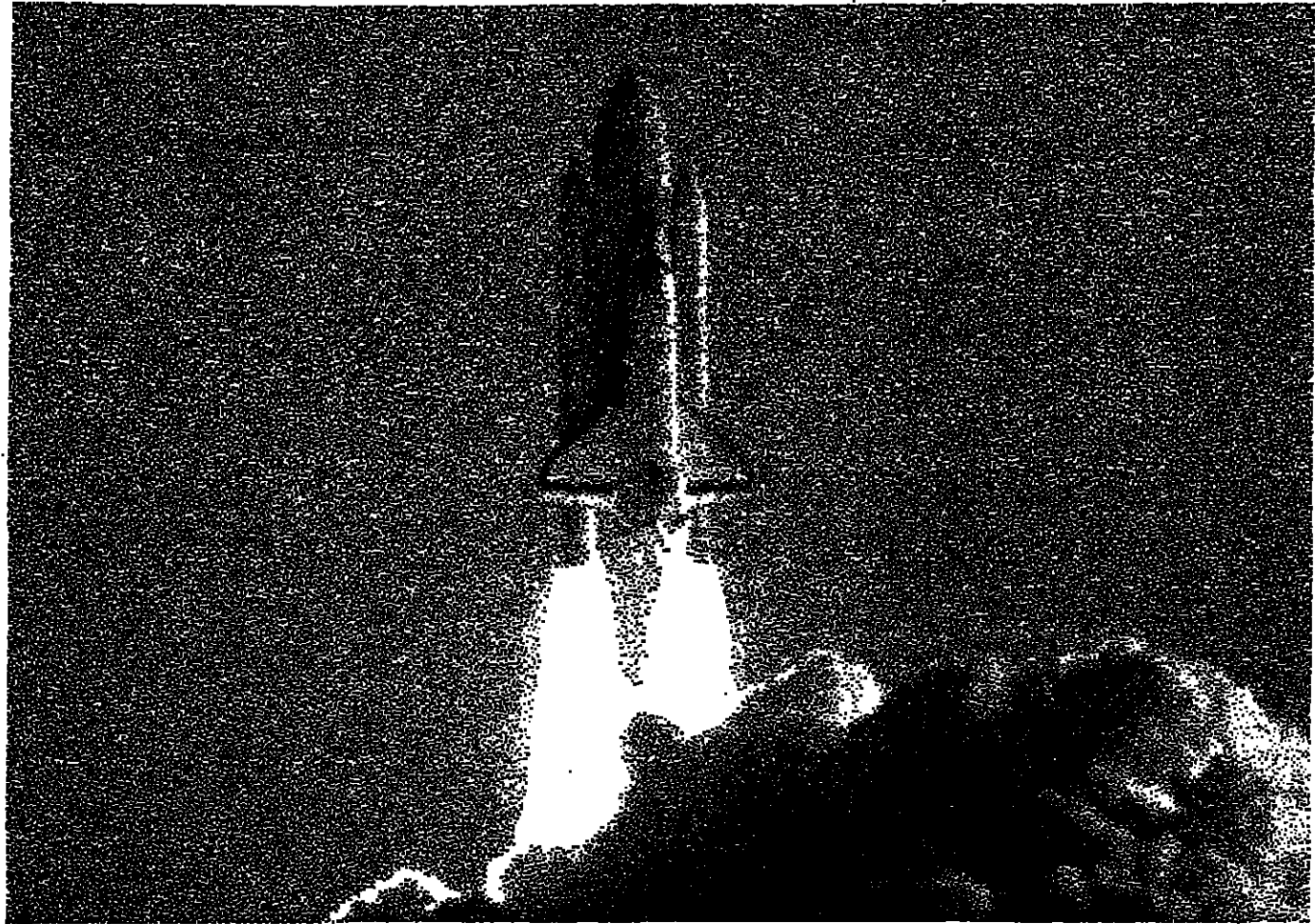


Photo by Gerald Dineen/Contrasto

GIVE YOUR NEW IDEAS THE BOOST OF THORN EMI TECHNOLOGY

For the challenges of the future we have the component technology to help make ideas become realities. Your ideas can benefit from the boost of the same resources and expertise in components that have contributed to the space shuttle, and countless other electronic, aerospace and defence projects.

Connectors • professional CRT's • photomultipliers • plasma displays • camera tubes • thick film hybrid circuits • resistors • switches • relays • image intensifiers • solid state light sensing devices • precision miniature motors • DC tachometers • control amplifiers • power supplies • accelerometers • microwave devices and sub-assemblies • precision miniature hydraulic systems • microprocessor devices • leading-name active and passive devices • illuminated graphic panels • solenoids • integrated circuits • solid state memories • these are some aspects of our components capability. And these are the many leading companies which comprise its strengths: THORN EMI Brimar • Crellon Gothic • THORN EMI Electrical Components • CGS Resistance • THORN EMI Electron Tubes • Keyswitch Varley • Systron Donner • THORN EMI Panelgraphic • Evershed & Vignoles.

In components, and test and measurement too, we have the technology to help make your idea a reality. Contact us now.



THORN EMI Technology
Components Division, Kent House,
81 Station Road, Ashford, Kent TN23 1PJ
Telephone: 0233 36845 Telex 96541Z

ATHORN EMI company

Let us show you how we can help solve your problems

We develop, design, manufacture, supply, install and maintain
Communication equipment and systems.
Computer and related equipment.
Automation of traffic, power generation/distribution and industrial processes.
Test and measuring equipment/instruments.
Active and passive electronic components.
Electromechanical devices, components and sub-assemblies.
Electrical and electronic equipment for motor vehicles.
Consumer products.

Offered: licences, partnership, patents, joint venture, know-how and co-production.



Iskra has 24 trading companies, representative offices and production plants in 18 countries all over the world.

Contact our trading subsidiaries in West Europe:
United Kingdom Iskra Limited, Redlands, Coulsdon, Surrey CR3 2HT, tel. (01) 668 7141, telex 946 880 iskra g
Switzerland Cranex AG, Talacherstrasse 17, CH-8085 Zürich, tel (01) 829 23 77, telex 53 513 cnx
Fed. Republic of Germany Iskra Elektronik GmbH, Furtbachstrasse 2 b, D-7000 Stuttgart 1, tel. (0711) 60 30 61, telex 72 27 00 isel d
Italy Iskra Elettronica Italiana, S.r.l., Piazza de Angeli 3, 20146 Milano, tel. (02) 498 00 36, telex 320 360 iskra it
France Iskra France, 354, Rue Lecourbe, F-75015 Paris, tel. (01) 554 04 27, telex 202 890 f



Iskra

Head Office: Iskra Commerce, 610011 Jobšana, Trg revolucije 3, Yugoslavia, tel. International +38 61 213 213, telex 31356 yuiskexp
Visit us in Paris at Salon International des Composants Electroniques, Hall 1, Allée 10, Stand 5A.

ELECTRONIC COMPONENTS II

Trade flows become a political issue

THE "JAPANESE threat" to U.S. dominance of the world market for electronic components is no longer simply an industry issue. As the magnitude of the problem has emerged, concern has spread into the political arena to be debated in the U.S. Congress, studied by the Department of Commerce and possibly to be acted upon directly by the President as a matter of national security.

Can the Japanese repeat their successes in the automotive, steel, textile and consumer electronics markets to take over much of the world market for semiconductor devices? Many in the U.S. believe that they can, and will, unless something is done to stop them.

U.S. imports of Japanese components, in particular memory chips, have become an important factor in U.S.-Japanese trade negotiations. The U.S. industry wants "reciprocity", that is, they want the Japanese to allow free access to their domestic market.

Currently, trade barriers, both official and informal, prevent U.S. firms from establishing themselves in the Japanese market-place, according to a study sponsored by the Joint Economic Committee of Congress.

While the majority view of the U.S. industry, as expressed by the Semiconductor Industry Association, strongly favours open trade between the U.S. and Japan, there is some pressure for protectionist measures in the U.S., should trade negotiations fail to produce compromise on the part of the Japanese.

Motorola, one of the largest U.S. semiconductor producers, recently called upon the Department of Commerce to make an "informal" study of Japanese pricing policies in the 64K Ram (Random Access Memory) market, with a view to possible anti-dumping action against Japanese producers of the memory chips.

Others are hopeful that the President may act under a little known national security provision of the trade code to limit imports of 64K Rams as a strategic product.

U.S. chip makers are in a fighting mood. The combination of general economic pressures and increasing Japanese competition in the semiconductor memory market sharply reduced the 1981 profitability of every major U.S. chip manufacturer. Through-out this recession, however, U.S. semiconductor manufacturers have steadfastly maintained high capital spending.

A previous business downturn in 1974-5 taught them a hard lesson. In that recession, U.S. firms stopped expanding their production capabilities. When the market turned up, the U.S. companies were not able to keep up with demand, and Japanese competitors stepped in to fill the gap in supply and demand. Then, Japanese suppliers established a foothold in the U.S. and European markets that they have never relinquished.

So, despite their falling earnings, U.S. chip makers are spending enormous sums on updating and expanding their production facilities.

For many years, U.S. semiconductor chip makers competed with Japanese suppliers without concern. U.S. dominance seemed invincible. But when Japanese suppliers "bought" 40 per cent of the 16K Ram market, using what the Americans term predatory pricing tactics, attitudes changed.

"With the 16K Ram they had a field day because it was the highest volume circuit ever produced. This collapsing price situation has now carried over into the (next generation) 64K Ram area pre-empting the 64K Ram going through its normal experience curve in pricing," John Welty, president of Motorola said at a recent industry meeting.

"It takes a reasonable amount of profit for the semiconductor

brecht Quist, points out that the Japanese thrust has been principally focused on a narrow segment of the market: mos (metal oxide semiconductor) memories, and cmos (complementary metal oxide semiconductor) static memories.

A Japanese presence in all other sectors of the U.S. market has been limited, the report points out. Significantly, Japanese chip producers do not have the software and systems expertise needed to support microprocessor development and sales, H & Q believes.

While this may be true, the Japanese have been quick to take advantage of U.S. microprocessor technology. Nippon Electric Company, for example, is now believed to be the second largest producer of Intel's very successful 18-bit microprocessor and Hitachi has recently begun production of the competing Motorola micro.

"Second sourcing" pacts between U.S. and Japanese producers have become common over the last few years, and the build up of relationships between U.S. and Japanese firms may go some way towards smoothing trade relations between the two countries.

Japan v. U.S.

LOUISE KEHOE

industry to fund research and development on newer, more sophisticated integrated circuits." Mr Welty continued. "While our 64K Ram customers may be getting a bargain on products they buy today they are really mortgaging their future."

A somewhat different view is expressed by Robert Noyce, vice-chairman of Intel. "Limiting the imports of one product won't solve any problems," he says. Mr Noyce, in his role as chairman of the semiconductor industry association has been active in the formulation of a scheme to co-operate in funding basic research in semiconductor technology at U.S. universities.

He views this as a solution to two of the underlying problems of the U.S. semiconductor industry: the rising cost of research and development and the shortage of electronics engineers.

Another co-operative venture, with more immediate commercial goals, has been proposed by Control Data Corporation. Last month, the company's chairman, William C. Norris, hosted an industry meeting at which he presented his idea to form a research and development corporation to be funded jointly by U.S. computer and semiconductor companies.

Such a proposal is revolutionary in the U.S. since it would almost certainly require changes in anti-trust regulations. Mr Norris maintains, however, that it is essential to the survival of the U.S. semiconductor industry.

Despite the strong statements of Mr Norris and other industry figures, some analysts believe that the Japanese threat has been greatly exaggerated.

A recent report by San Francisco investment bankers Ham-

Another trend that may work out some of the problems is that U.S. firms, such as Texas Instruments, now have substantial production facilities in Japan. Japanese producers are also setting up assembly plants in the U.S.

The real battleground for the fights between U.S. and Japanese chip makers will, however, be in Europe. Already, price wars in the European markets have reached the point where U.S. manufacturers are complaining that they are unable to make any profits on their sales.

Underlying the marketing battles is the more long-term question whether the Japanese have in fact moved ahead of the U.S. in semiconductor technology. While Japanese chip manufacturers have clearly perfected the art of high volume manufacturing of standard integrated circuit devices — as evidenced by their success in the mass markets for "jelly bean" products such as dynamic Rams—there is little evidence so far to suggest that they have the innovative design capabilities of such U.S. companies as Intel and Motorola.

This is not to say that the Japanese are not capable of developing such expertise—but they have yet to do so. One scenario for the future of the U.S. v Japanese competition predicts that the Japanese will capitalise upon their progress in memory devices to become the major producers of all standard semiconductor devices. U.S. companies, meanwhile, will maintain and expand their lead in custom-designed parts.

At the same time, U.S. semiconductor houses are increasingly moving into systems markets where they can gain more profits from their costly development of original designs in the microprocessor field.

MOTOROLA Claims widest range

MOTOROLA CLAIMS to have the broadest product range of any electronics component manufacturer in the world. The company's "semiconductor product sector" as it was renamed last year, had sales last year totalling about \$1.3bn.

The company is a major manufacturer of discrete components: transistors, resistors and the like. As other component manufacturers have dropped out of this less glamorous end of the component business, Motorola has increased its market share, so that although the discrete market is not growing, Motorola's sales are.

In integrated circuits, Motorola is the top U.S. producer of 64K Rams, and second only to Intel in microprocessors. Both markets are highly competitive and Motorola, as much as any other producer, has suffered from the recession.

Through its recent acquisition of Four Phase Systems, a computer manufacturer, Motorola is entering the data processing market. At the moment, however, the corporation's chief interests are in communications equipment (with sales of over \$1bn), semiconductors and other types of electronic systems.

Louise Kehoe

NATIONAL SEMICONDUCTORS

Leaders in circuits field

WITH INTEGRATED circuit sales of an estimated \$670m in 1981, National Semiconductor fell from second to third place among U.S. producers. The company's earnings have been severely reduced by economic pressures and dropping memory prices over the past year. Another problem for National has been its disqualification as a supplier of some military products due to alleged failure to comply with Department of Defense production and testing rules. National is, however, a dominant supplier in several market sectors, notably the bipolar circuits market. In linear technology National is a leader, and it is also developing a strong position in CMOS—the low power technology that is widely expected to become a major challenger to today's mos (metal oxide semiconductor) technology.

In microprocessors, National is soon to begin volume production of its new 18-bit microprocessor. The device is believed to be the most advanced of its type, but National will be up against stiff competition from already established suppliers. Apart from standard products, National makes custom integrated circuits for individual customers.

L. K.

INMOS

Ram chips to be made at Gwent

INMOS, the British state-backed producer of mass-market microchips, is shortly to start making 64K Random Access Memory (Ram) chips at its new factory in Gwent, South Wales.

Inmos was set up in 1978 by two Americans, Dr Richard Fetritz and Dr Paul Schroder, and the British Mr Rann Barron with substantial backing from the National Enterprise Board. Government backing for Inmos is now nearly £100m, in equity, guaranteed loans and grants. The National Enterprise Board, now part of the British Technology Group, is drawing up plans to sell a substantial part of its 75 per cent stake in Inmos.

Sales at Inmos are running at over \$1m a month largely in 16K Ram chips produced in the U.S. Inmos strategy is to offer high performance chips which can command a premium price.

Its new 64K Ram chip faces strong competition from established semiconductor giants and there is already a number of Japanese companies sampling the next generation of memory chips, the 256-K Ram.

Inmos's microprocessor which it calls a "transputer" will not be available until 1984 although the company is to start talking to potential customers next year. Inmos claims the transputer will be a major technological jump with sufficient attraction to wean companies away from standard microprocessor systems in which they have a substantial investment.

Jason Crisp

TRANSUCERS—in journalistic terms—is a synonym for sub-editor. These are the people who translate the incomprehensible language of the writers into a language suitable for English consumption.

In electronic terms the transducer converts electrical signals via telephone earpieces or loudspeakers to sensors to measure temperature, pressure, failure in moving machinery, cracks in walls, fire detection, and such things.

It is a large, growing and, at present, a rather expensive industry—at least if you need transducers. But as the revolution in electronics proceeds prices should fall.

It is, however, a fragmented industry with many small companies in the field and the larger companies producing transducers for their own use.

The entire Western world is committed to transducers—the UK is not lagging and is producing some of the best technology in the field.

Ancom of Cheltenham provides a selection of specialist temperature and humidity orientated products and is successfully exporting to Japan.

The company's range of two and three pin thermocouple connectors with a wiping action ensuring homogeneous contact at all times includes 10 compensated colour coded thermocouple types in standard and miniature sizes.

The same company has also announced a complete range of temperature measurement and control hardware systems which includes bench top, panel mounting and hand-held thermometer and relative humidity measuring instruments. Included is an energy limiting temperature controller and an

eight channel alarm scan unit. There have been problems with switching moment and switching of Oxted, Surrey, appears to have come up with some answers with its new range of ultra-low thermal electro-magnetic relays.

Its Series 3400 relays are designed as input devices for low level switching applications such as data acquisition systems, process controllers and monitors, data scanners, multiplexers and digital and analogue multipoint recorders.

In Germany, Helmut Maueil

Transducers

MAX COMMANDER

(D5604 Neviges, AM Rosenbuegel), offers a complete control room hardware system, including - all - connections, panels, display switching and control elements. The interactive mimic display is of high quality.

Maueil's mosaic control panel consists of a metal section framework which can be assembled into a lattice grid. Metal or plastic tile modules are fixed to the framework by hair springs. The grid/tile network can be assembled to form a flat or curved surface. Three sizes are available.

As an addition, Maueil has a wide selection of discrepancy and toggle switches, and push-buttons, with or without illumination, for auxiliary circuit operation. The units are fully sealed and offer protection against touch, solid substances

and humidity. Norsem Optoelectronics in Harlepool, Cleveland, is well known for its expertise. Now it is planning its hopes on the NDM 3D5 3 1/2 liquid crystal display panel meter module.

Norsem has also obtained a number of franchises for optoelectronics including the UK distributorship for BBC LCDs and also the introduction to Britain of membrane switch panels from Luminescent Systems Inc.

In the near future digital data encryption techniques will play an increasingly important role in the financial world. Brokerage transactions, fund transfers and almost all City style movements of money or documents will need special security systems.

Pronto Electronic Systems in Essex is offering Western Digital's WD2301/2002 series of monolithic data encryption devices. Data can be encrypted and decrypted for later use and stored in a coded cipher free from unauthorised entry.

Cryptography for beginners is a kit offered by the company for people unfamiliar with this technology. The primer kit allows experimentation and exploration of DES cryptography. It includes a programmable cryptographic pcb with standard RS232C I/O interfacing an assembly, wiring and operations manual, cryptographic primer and relevant documentation.

The PCB accepts baud rates from 50 bps to 19.2k bps the user inputting the 64 bit key-word from a computer terminal. The board contains a dual port encryption device with a LED display for status and error message.

ELECTRONIC COMPONENTS III

Overall policy is lacking on semiconductors

WESTERN EUROPE is the world's third largest market for semiconductor products after the U.S. and Japan. Yet its own indigenous manufacturers have managed in recent years to cover only about half of its requirements, with most of the rest being supplied by American companies.

According to Dataguest, a leading U.S. market research house, Europe accounted for 20 per cent of the world market for semiconductors last year, valued at \$13.5bn, while producing 9 per cent of world output. The European market's share of the total is expected to fall to 18 per cent this year—reflecting a strong surge of demand in Japan—though Europe's production is forecast to edge up to 10 per cent.

Europe can also boast only two companies in the list of the top ten semiconductor manufacturers. They are Philips, the Dutch group whose geographically-diversified operations include Signetics, a sizable U.S. company acquired in the mid-1970s, and Siemens, the largest West German electrical and electronics manufacturer.

Addressing the balance has become an increasingly important objective for a number of European countries during the past decade. They are concerned with more than just their adverse trade figures in component supply. Semiconductor technology is now perceived in many European capitals as the main-spring of the new electronics revolution and its possession as a determining factor in future industrial development. Without autonomous capacity in the development, design and manufacture of integrated circuits, it is feared, Europe will be condemned once again to trail behind the U.S. in tomorrow's growth sectors. This anxiety is particularly acute in France.

But to date, there is no Europe-wide policy on semiconductors. In spite of efforts by the EEC Commission to win the support of the Council of Ministers for a joint research and development programme, national measures predominate. The only issue on which there can

be said to be common ground is the maintenance of an EEC tariff on semiconductor imports.

The national instruments used to try to promote the semiconductor industry take a variety of forms. These include support for research and development, Government procurement policies, investment grants and subsidies, encouragement of mergers and industrial reorganisation and incentives for foreign investment.

These measures are used in different combinations, and in different degrees, in each European country. A brief look at recent developments inside the bigger EEC member states illustrates the considerable variations that

European competition

GUY DE JONQUIERES

exist in the pattern of Government policies and industrial structures.

Britain: None of the major electronics companies, such as the General Electric Company, Ferranti, Plessey or Thorn-EMI manufactures mass-produced "standard" microchips. GEC considered mounting a UK-based joint venture in this field with Fairchild of the U.S., but the proposal was dropped two years ago.

Instead, British companies have concentrated on more specialised semiconductors to be used in specific applications, often determined by their own manufacturing requirements. Ferranti has established a strong position in the growing market for "semi-custom" devices using a technology which it pioneered.

The only UK entrant in the mass-market is Immos, the state-owned venture set up three years ago, in which almost £100m has been invested. Immos plans to make both memories and microprocessors in Britain and the U.S. Commercial production

INTEGRATED CIRCUITS		WEST EUROPEAN MARKET		IC MARKETS IN EUROPE		
End 1981 \$m		End 1981 \$m		Percentage		
1980	↑1986	1981	1983	1980	1985	
France	254	640	Germany	675	760	1,445
Germany	713	1,445	UK	318	335	595
Italy	179	315	France	280	325	640
Scandinavia	163	325	Italy	185	175	315
UK	388	595	Scandinavia	160	180	325
Rest of Europe	253	490	Rest of Europe	230	255	480
Total	1,950	3,800	Total	1,820	2,030	3,800
↑ Estimated. Mackintosh International.		↑ Estimated. Mackintosh International.		Mackintosh International.		

is only just starting and it is too early to say how it will fare in the intensely-competitive world markets.

Rather more public money has been spent on attracting foreign investment by U.S. and Japanese chipmakers, particularly in Scotland.

France: In 1978, the last Government launched a "Components Plan" providing for state support of FFr 600m (subsequently expanded to FFr 800m) over four years. The money has been channelled to five companies or "poles," each of which has been encouraged by the Government to concentrate on particular aspects of semiconductor development.

The French Government also helped French companies to forge alliances with U.S. manufacturers — Thomson with Motorola, Matra with Harris and Intel and Saint Gobain with National Semiconductor.

The Mitterrand Government is expected soon to launch a new and expanded Components Plan—support of as much as FFr 2.5bn over four years has been discussed.

A restructuring of the French industry is also on the cards: there has been speculation that after the completion of nationalisation plans, St Gobain may withdraw from semiconductors and Thomson may become the pivot of the industry. The future shape of Matra-Harris-Intel is somewhat unclear.

West Germany: The Federal Government provides no state funding specifically for the expansion of semiconductor manufacturing. But the industry benefits both directly and indirectly from Government programmes which emphasise research and development and the application of microelectronics by equipment manufacturers.

The country's biggest semiconductor manufacturer by a considerable margin is Siemens (other companies include AEG-Telefunken, Bosch and a subsidiary of Philips).

Since the mid-1970s, Siemens has made a major effort to expand its operations.

But this progress has been made at a heavy financial cost. Siemens's component operations have plunged deeply into loss.

Italy: The main Italian semiconductor manufacturer is SGS-Ates, part of the Stet national telecommunications group. The product of successive mergers, SGS-Ates has a history of heavy losses and has suffered from lack of firm management supervision from its parent, which continues to subsidise it.

Within the past two years, however, a recovery strategy has been initiated under a new management composed largely of former Motorola employees. It has launched an ambitious plan to return to profit by 1985 by building up international sales of components aimed at telecommunications and consumer electronics manufacturers. Discussions have been held on the possible purchase by Olivetti of a stake in the company.

At a time when even the giants of California's Silicon Valley are feeling the chill wind of recession and intensified Japanese competition, how realistic are Europe's chances of establishing a major role in the world semiconductor industry?

A study published last year by Sussex University concludes that a major breakthrough is unlikely. Though Europe may increase modestly its share of world production, the study forecasts that the industry is likely in future to be dominated by an "oligopoly" of big companies.

Although the study says that Philips and Siemens may be members of this club—along with U.S. and Japanese manufacturers—it suggests that their success will be largely due to their own efforts, not to Government policies. As a result, their main allegiance will be to world markets and not particularly to Europe.

FERRANTI

Big share in market for ULAs

The British company Ferranti has successfully pioneered a special microchip which has become one of the fastest growing areas in the semiconductor industry. Although Ferranti now faces strong competition from the semiconductor giants—with many times its capacity in microelectronics—it still has between 30 and 35 per cent of the world market for uncommitted logic arrays (ULAs) worth \$150m.

Demand for ULAs is currently growing at 40 per cent a year and the market is expected to be worth \$1bn within five years. ULAs—known in the U.S. as gate arrays or semicustom logic—are standard chips which can be customised for a special function at the final stage of manufacture. The advantage is that it greatly reduces the lead times and cost to produce a new special microchip.

Ferranti's ULAs are being used in a host of applications from mainframe computers to dishwashers, from telephone exchanges to cameras. One ULA chip replaced 18 microchips in the tiny Sinclair ZX81 computer, others are used in the Monarch FAX, made by GEC and Plessey.

Dr Alan Sheperd, managing director of Ferranti Electronics expects the company will continue to expand at over 30 per cent because of the very strong demand for ULAs. In the year ending March 1981 Ferranti Electronics, including its Californian company Interdesign, had sales of £27.1m, which is 10 per cent of the total Ferranti group's turnover.

Jason Crisp

PLESSEY

Microchip sales rise

PLESSEY SEMICONDUCTORS expects turnover in the financial year to March to have risen by 23 per cent with the sale of 20m units, in one of the most depressed years the semiconductor industry has known. By value, half of Plessey's semiconductors are exported.

About 30 per cent of its products are used in telecommunications and a similar volume for industrial and consumer goods. Just under 15 per cent of Plessey Semiconductors output are digital linear circuits for radio communications, and professional, consumer and citizen band radio.

Other main markets include radar (6 per cent), UK military (11 per cent) and instrumentation (5 per cent). Plessey says there is a sharp growth in the volume of its custom micro-

chips which account for 15 per cent of sales. Semi-custom chip volume—using cell based arrays—is growing at 180 per cent a year.

Plessey claims to have a dominant share of the world market for frequency synthesizers used for cable television, which is booming in the U.S. It also reports a significant growth in demand for products used for power controls in consumer products such as cookers, drills and hairdriers.

Japan is a significant customer of microchips for fishing boat radar and power controls for hairdriers and underfloor heating. At the height of the citizen band boom Plessey sold 2.5m circuits to Japan to put in the sets.

GEC

Strong base in ICs

GEC's semiconductor operations were substantially reorganised in 1980 after a planned joint venture to make standard mass market microchips with the U.S. company Fairchild collapsed.

The new company Marconi Electronics Devices (MED), brought together GEC Semiconductors, AEI Semiconductors and the microelectronics division of Marconi Space and Defence Systems. A 40,000 sq ft factory was built alongside another new factory at Lincoln making microwave components and was completed in less than a year. All GEC's integrated circuit production has been transferred to Lincoln where 1,200 people are employed.

GEC's semiconductor sales

FAIRCHILD

R & D spending lifted to \$100m

THE GRANDFATHER of silicon valley, Fairchild, was the spawning ground for today's industry leaders. Charles Sporck, president of National Semiconductor, Jerry Sanders, president of Advanced Micro Devices, and Robert Noyce, vice-chairman of Intel, are all Fairchild alumni.

While companies started by ex-Fairchild employees grew to become industry leaders, Fairchild itself fell pitifully behind in semiconductor technology through the 1970s. Fairchild has, however, been very successful in the test equipment market.

total £25m a year. In addition its U.S. subsidiary Circuit Technology (CTI) at Long Island, which makes specialist hybrid semiconductors, has annual sales of \$20m.

About half MED's business is based in integrated circuits which are increasingly incorporated in sub-assembly hybrids. About 20 per cent of the devices produced are microwave, mainly used in defence applications.

The major markets are industrial, telecommunications and military application, and about half the company's sales are to other companies in the GEC group. Direct exports account for about 15 per cent of sales.

J.C.

INTEL

Falling prices hit innovation

INTEL is known as the innovator of silicon valley, and is running hard to keep up the reputation. The company aims to introduce over 125 new products this year. Many of these products will not however be in the components area.

Intel has gradually increased its interest in systems markets over the past couple of years and systems now account for about 40 per cent of the company's sales.

Intel's sales of integrated circuits totalled around \$544m in 1981. The company's strength is in microprocessors, where it leads in the 16-bit market with the 8086. Through a wide ranging technology exchange agreement with advanced micro devices Intel aims to share some of the costs of new product development in this area.


Last year Intel opened its "silicon foundry" operation—through which it has entered the market for manufacturing customer designed devices.

Like all U.S. integrated circuit manufacturers, Intel has experienced a slump in profits over the past year, due to the recession and falling prices. Intel reckons to have lost \$100m in earnings due to dropping prices on its memory products. The company has only just entered the battleground of the 64k Dynamic Ram market, but aims to become a major supplier by the end of the year.

Louise Kehoe


It pays to open a few doors.

Belling and Lee Ltd




Fibre optics, circuit protection and indication equipment, and a wide range of connectors.

BEPI (Electronics) Ltd




Supreme in printed circuit boards.

Cathodecon Crystals Ltd




Innovators in crystal units.

Egen Electric Ltd



Leaders in potentiometers.

Hinchley Engineering Co Ltd




First in transformers and power units.

Newmarket Microsystems Ltd




Hybrid microcircuits and active filters.

Pye Connectors Ltd



Precision connectors for computers, telecommunications and aerospace.

Pye Electro Devices Ltd



Foremost in switches and displays, relays and capacitors.

Pye Switches Ltd



Unequaled expertise in the development of precision switches.

Varelco Ltd



Leading manufacturer in connector technology.

Wherever you knock, you'll get a warm welcome—and a deeper understanding of your component problems than you've ever had before.

No other group has such combined experience and expertise. And no other group of component companies can do so much for you.

Some measure of our success may be gained from our annual sales figures of around £50,000,000. If you'd like to know more, write for a brochure to: The Electronic and Electrical Components Group, Cambridge Electronic Industries p.l.c., Botanic House, 100 Hills Road, Cambridge CB2 1LQ. Telephone: 0223-314747; Telex: 817098.

ELECTRONIC and ELECTRICAL COMPONENTS GROUP

Cambridge Electronic Industries p.l.c.

A DEGREE BETTER



ELECTRONIC COMPONENTS IV

Armchair vision of brave new world

40 years 1942-1982

OXLEY DEVELOPMENTS COMPANY LIMITED

International leaders in research, development and production of exclusive high reliability professional electronic components and systems including:

- Capacitors, RFI Suppression Filters, Connectors, P.C. Hardware, Control Boards, Display Devices, Special Ceramics, Elapsed Time Indicators

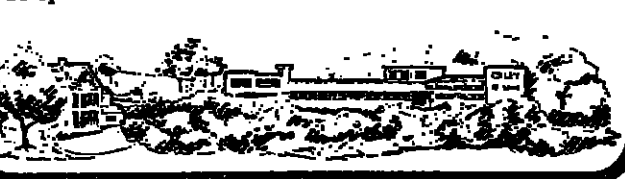
Oxley components are being used in many notable defence and professional engineering projects:

- European Space Programme
- Submarine Cable Systems
- Concorde and Tornado Avionics
- European Nuclear Energy Programme
- 'Jaguar' and 'Prattigan' Military Communications
- Battlefield Artillery Target Status Indicators
- Computer Terminal Interfacing

British Ministry of Defence Approval to DEF STAN 05-21 Government Approved Test House, BS 9000 Approved, Ministry of Defence, C.A.A., and British Telecom Contractors.



Oxley Developments Company Limited
Priory Park, Ulverston, Cumbria LA12 9QG
Telephone: 0229 52621 Telex: 65141



IT'S TOUGH being an electronic consumer. You sit in your armchair, turn the on/off button or switch channels—with your remote TV control. So the programme isn't so good—record it on your superb electronic video recorder.

Wife is just returning from the Women's Institute meeting—the garage doors open automatically for her while the latest electronically controlled magnetic lock (when she is inside the house, of course) turns your property into some sort of electronic fortress.

Whether you like it or not, you are an electronics consumer. If you have bought a new car in the past couple of months it might be worth looking under the bonnet and at the dashboard. Recognise anything?

This item was going to be about cable television. How the little box at the end of the cul-de-sac would provide you with 30 or more channels of entertainment and information. I envisaged you sitting in that armchair with a dish aerial on the roof picking up space signals; the latest news from

El Salvador.

It all sounds like an electronic Utopia. I shall be able to call up my bank and stop the mortgage payments, order a sack of potatoes and three pounds of butter from Tesco, and perhaps I can even convince the Financial Times that I no longer need to come to the office.

Just think I can awake, dial the News Desk and through my bedroom VDU phone a story, design the page, write the headlines, make corrections and still not shed my dressing gown.

But let's come down to earth—the cable television system has been reported to death—and look at the home-based electronics enthusiast.

The modern electronics hobbyist is the successor to the chap in the 1930s who built his model railway system. Then it was a carving knife, sundry bits of baksa wood, a few bits of metal and a hacksaw.

A model railway layout is still good fun but with a bit of electronic expertise you can simulate the sound of a Great Western steam engine and make it whistle at appropriate points on the track.

The do-it-yourself electronics man is well catered for by the technical Press. A visit to Smiths or most bookshops provides a bewildering array of electronics magazines. All are splendidly produced.

Electronics in the home

MAX COMMANDER

lots of colour and very strong on diagrams. (They have to be for the ordinary mortal to understand them.)

"Projects" seems to be the in word. Build your own home computer, build this, build that...

I looked, particularly at Electronics Today. The April issue is their 10th birthday. It offers a 10-page supplement, 10 projects, more than 50 circuits, free competitions with £500 in prizes, a digital multimeter, hi-fi amplifiers, plus much more...

This is the real armchair class on its graphs and diagrams. One feature had no fewer than 26 diagrams and equations.

The magazine produced a sort of leading article headed "10 Years On" in which it reviewed the dramatic history of electronics since 1972.

The birthday issue charted the course of the news pages, the first calculators, the first digital watches, the first MPU chips, cheap memory, the first Space Shuttle tests, bubble storage.

With commendable honesty it records manufacturers' successes, failures and its own gaffes. It ends: "It's an interesting conjecture as to what we shall be able to include in our 21st birthday issue." Any guesses?

So you have every little bit of electronic gadgetry installed. What's left? How about a nuclear radiation monitor? Ideal, after the holocaust. Radio and Electronics World says its hand-held monitor will detect gamma radiation, producing an audible click for each quantum of radiation received.

The instrument is of medium sensitivity to allow its use with radiation levels between one milliröntgen per hour and one roentgen per hour.

As Radio and Electronics World says, the unit will find many applications in schools, hospitals, power stations or any branches of industry using radioactivity materials.

But then one gets to the real nitty-gritty under a cross-heading which says: "After the Bomb."

Quote: "A nuclear radiation monitor is likely to be a very valuable asset to the survivor of a nuclear war. The levels of radiation are likely to be measured with the R and EW monitor."

"It is possible to extend the ranges of this monitor but it would require calibrating against a known source to give meaningful readings..."

I'm locking up the house, turning off the TV and video, shutting down the train layout and taking the circuit description to my fall-out shelter. The trouble is I do not appear to have a project to build this.

Sprague quality. The list is long!

- Aluminum Electrolytic Capacitors
- Tantalum Capacitors
- Ceramic Capacitors
- Metallized Film Capacitors
- Thick-Film Hybrid Circuits
- Resistor Networks
- Filters and Magnetic Components
- Semiconductors

Longer, perhaps, than you realize! Not only the high-reliability Sprague capacitors, but many other component ranges, all to our renowned standards. Latest technology, latest automated production and quality control techniques... bring you superior performance at competitive prices. And Sprague ranges come to you with cross-Europe availability. For literature, just contact your nearest address...

SPRAGUE
THE MARK OF RELIABILITY

Sprague World Trade Corp., 1215 Geneva St., Switzerland.
Sprague France S.A.R.L., 2, rue de l'Esplanade, F-92300 Bagneux, France. Tel: 656 10 10
Sprague Electric (UK) Ltd., 100, Longwalk Road, Uxbridge, Middlesex, UK. Tel: 835 5003
Sprague Elektronik GmbH, Löhnerstrasse 2, D-11035, 1000 Frankfurt/Main 70, Germany. Tel: 011-42521
Sprague Italiana S.p.A., Via G. Cesare 4, I-20144 Milano, Italy. Tel: 02-423 72 21
Sprague Scandinavia AB, Invernessvägen 2, S-192 76 Ericssund, Sweden. Tel: 08-85 02 20

THOMSON-CSF Defence benefits

THE SOCIALIST planners who have been rethinking France's microchip strategy want a less dispersed industry which is able to invest close to \$1bn between now and 1985. Detailed plans are not available yet but it seems clear that the chief role will be given to Thomson-CSF.

The company, now under state-control, but with an unchanged team, already leads as a supplier to the French market, with total component sales last year of \$560m, three-quarters of these in France. It was one of three French companies to get backing under Giscard for Metal Oxide Silicon (MOS) circuits—and unlike the others was able to spend it all on research and development.

Its bipolar circuit side is being amalgamated with Efcis, a joint venture between Thomson and the Atomic Energy Commission (CEA) which went into standard circuit production under the first components plan in 1978. Thomson-Efcis, as it is now called, which keeps the CEA in as a minority partner, expects turnover of \$125m this year and \$400m-plus in 1986.

Its head, M. Paul Mirat, a former CEA man, is an enthusiast with a belief in a special French aptitude for conception and design of microcircuits.

He sets store by the fact that Thomson, unlike Matra and Saint-Gobain which have U.S.

shareholding partners in their microchip ventures, is master in its own house.

This leaves it free, despite a licensing agreement with Motorola, to negotiate with other foreign companies—which it is actively doing. The Japanese, says M Mirat, have proved the benefits of shareholding independence. But Thomson also has another reason to keep to itself—its big defence involvement.

It is preparing to launch a new generation of products, concentrating on areas where it can produce innovative, key components using its own technology. The main lines are telecommunications and videotex systems, microprocessors and mass consumer products—for instance, components for electronic video cameras.

Being part of a much larger group—the recently nationalised Thomson-Brandt—is seen as giving the company two big advantages. One is a far-flung marketing network, which helps its efforts in the U.S. and Far East. The other is the group's leadership in French household electricals. Consumer products, M Mirat points out, are where the Japanese started for their assault on the components business.

David White

The manufacturing of devices for in-company use is a fast-growing sector

Where do-it-yourself pays off

AS SEMICONDUCTOR chips rapidly become denser, with more and more transistors packed on to a chip, the integrated circuit has become more of a sub-system than a component. So many of the functions of a system are held on so few chips, that the old definitions begin to break down.

Similarly, it is becoming more difficult to describe accurately one electronics firm as a systems house, and another as a component manufacturer. Increasingly, system manufacturers are making some of their own chips, and chip-makers are building some of their chips into systems.

When Intel, generally considered to be a component maker, says that 40 per cent of its revenues come from system products, one might well ask which products it considers to be systems—and which components.

Take, for example, the Intel 32-bit microprocessor chip set. This is one of the most advanced implementations of VLSI (very large scale integrated circuit) design to date. On five chips of silicon resides the power of a mainframe computer. Are those chips components or systems?

Moving in the same direction, Hewlett-Packard, known for its instruments and computers, has developed its own 32-bit chip set and is manufacturing it using some of the most advanced semiconductor processing technology in the world.

"Captive" chip manufacturers—those who produce devices strictly for in-company use—are growing much faster than growing market producers. By the end of the decade, the value of devices produced by the captives in the U.S. are expected to equal that of merchant market suppliers.

Already the captives make one third of all the integrated circuits (by value) produced in the U.S.

Most of the large captive component manufacturers are computer companies, the largest being IBM which alone is expected to manufacture \$2.1bn worth of ICs this year, making it the largest IC producer in the world, according to market analysts Integrated Circuit Engineering of Scottsdale, Arizona.

Other major manufacturers in the captive class include Western Electric, which makes devices for AT & T and Delco, a subsidiary of General Motors. All the major manufacturers, including Hewlett-Packard.

Captive suppliers

LOUISE KEHOE


NCR, Honeywell, DEC, Burroughs and Data General have some in-house component production capabilities: either pilot production lines for making prototypes, or full-scale high volume facilities.

Why should these electronic systems manufacturers decide to take a do-it-yourself approach to chip production? Some have their own production lines in order to ensure a ready supply of key parts. Hewlett-Packard, for example, recently signed a technology exchange agreement with Hitachi which will allow HP to produce some of its own 64K dynamic random access memory chips using the Hitachi design.

One of the advantages of in-house manufacture is that the turn-around time from chip design through prototyping to full-scale manufacture can be controlled and speeded up. IBM has a special production line believed to be the most highly automated in the world, that it uses for urgently required devices. As well as being the largest chip producer, IBM is now leading the technology of chip production.

Another reason for captive production may be that there is a need for a special "custom" chip not available from a merchant supplier. If the systems manufacturer designs to chip himself, he may want to guard that expensive proprietary design and keep its manufacture inside the company.

Some words of advice from a successful Scottish businessman.



品質第一をモットーにしております。

For everyone from the one-man-band to the multi-national.

Return this coupon and we'll tell you more.

And remember—we're bound to say that Scotland is the best location for your new base. But Mr Noguchi can say what he likes.

And the Scottish Development Agency can help with expansion plans, finance, premises, and a complete range of management services from marketing to labour relations.

To: Denzil Dunnett, Scottish Development Agency, 17/19 Cocksfoot Street, London SW1Y 5BL. Telephone 01-839 2117. Telex 8811015.

I am looking for a new manufacturing location. Please send me details of what Scotland has to offer.

Name _____ Address _____ F.T. 514

Scottish Development Agency, 120 Bothwell Street, Glasgow G2 7JP. Telephone: 041-248 2700. Telex: 777600.

FUJITSU Domestic leader

LIKE Japan's other top electronics manufacturers, Hitachi and NEC, Fujitsu is heavily involved in both computers and integrated circuits. The company's computer division overtook IBM Japan in the late 1970s to occupy the first place in Japan's domestic market in integrated circuits. Fujitsu probably ranks fifth or sixth but the company stresses that this relatively modest position belies some very special strengths.

Fujitsu has deliberately avoided competing with NEC and Hitachi in the manufacture of semiconductors for use in consumer products such as TV sets or electronic calculators. Instead it has focused on the kinds of ICs that are used in computers, automation machinery and communications equipment.

Fujitsu claims first or second position among Japanese manufacturers in these specialised areas.

Its position in 64 kilobit dynamic Random Access memories is described as "very strong" and the company claims to possess the world's most advanced technology in gate array and semicustom logic circuits.

If Fujitsu differs from its large Japanese rivals in having focused to date on a few carefully selected market sectors it resembles them in having pursued an extremely aggressive development and expansion policy during the past few years. Investment in the company's integrated circuit division has been running at an annual rate of ¥30bn (\$12.45m) per year for the past three years and is expected to remain at roughly this level.

This works out at around 30 per cent of the (current) total value of the company's IC production (about ¥100bn per year, including ¥20bn worth of "in house" production).

Fujitsu has not only gone all out to increase production capacity. It also took an active part in the Japanese Government-sponsored project for joint development of basic Very Large Scale Integration know-how which ran from 1976 to 1980. Fujitsu's four partners in this project were its principal competitors, NEC, Hitachi, Toshiba and Mitsubishi Electric.

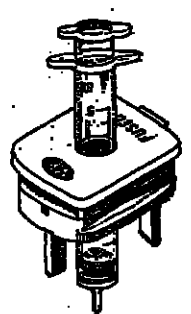
However, the joint research project confined itself to developing basic know-how for the manufacture of 64 k Rams. Design of products for the market was carried out separately by each company after the joint project ended in spring 1980.

Fujitsu today produces integrated circuits at five factories in Japan, as well as one in Ireland (where its assembly plant went on stream in 1981) and one in San Diego, California.

In the context of Fujitsu's overall operations integrated circuits are still easily overshadowed by the dominant computer division.

Charles Smith

FINANCIAL TIMES SURVEY



MEDICAL ELECTRONICS

7 July 1982

The Financial Times proposes to publish a Survey on Medical Electronics in its issue of July 7, 1982.

The survey will look at how rapid advances in technology are revolutionising medicine.

It will report on the products and markets ranging from expensive computerised diagnostic equipment to cardiac pacemakers and defibrillators.

Editorial coverage will also include:

- Laser surgery
- Laboratory diagnostic equipment
- Patient Monitoring Systems

For further information and advertising rates please contact:

Nigel Pullman
Financial Times, Bracken House
10 Cannon Street, London EC4P 4BY
Tel: 01-248 3000, ext 4063
Telex: 885033 FINTIM G

FINANCIAL TIMES EUROPE'S BUSINESS NEWSPAPER

The size, contents and publication dates of Surveys in the Financial Times are subject to change at the discretion of the Editor.

مركز الأمل

ELECTRONIC COMPONENTS V

A world where silicon still dominates

DARWIN WOULD have liked the semiconductor industry. Its principal evolutionary path is clear and fixed. Silicon will continue to hog the stage...

HP built a perfectly respectable 16-bit microprocessor with it and used it in the 9825 desk-top computer. The company now retains its interest in silicon-on-sapphire technology but only because of machines like the 9825.

Why is silicon so useful, and what are the limits to its use which makes research into other materials necessary? Bardeen, Brattain and Shockley invented the transistor, a solid state device with the ability both to amplify an electric current or act as a conductor.

Germanium is fairly rare—it can be obtained as a by-product from smelting zinc—and germanium transistors had a limited temperature range. They did have, however, a fairly low operating voltage which made them suitable for use as power transistors, and germanium power transistors are still marketed today.

Silicon has its limitations, especially in speed. Mr David Wilcox, a design engineer at Plessey, which has developed some of the most sophisticated high speed counters, points out that a counter fabricated in conventional silicon can run at 1.8 thousand million cycles a second.

Silicon arsenide circuitry offers the possibility of high speed computation in a system which would not need elaborate cooling methods because of the lower power requirements expected of gallium arsenide chips.

Fujitsu, one of the three big Japanese mainframe computer manufacturers, is well advanced with a super computer with logic based on GaAs. Strategic Incorporated notes: "If Fujitsu's efforts are not taken seriously, and if similar development programmes are not initiated in the U.S., Fujitsu is likely to become the world leader in the large mainframe computer marketplace based on the use of GaAs technology."

So why are all the major computer manufacturers not jumping on the bandwagon? According to Dr Tuck, who has been working on GaAs for almost 20 years, it is more expensive than silicon and more difficult to handle. David Grundy, Technology Director for Ferranti Semiconductor, puts it more pithily: "It is a swine of a material to handle. Furthermore it gives off toxic fumes during processing."

The cost difference is significant; several hundred dollars for a 3 in wafer (thin slice) compared with only \$5 for silicon. According to Strategic (whose report is available from IPI, 134 Holland Park Avenue, London, W11, at a cost of £875) the worldwide market for GaAs products will rise from only \$2.7m in 1981 to \$1.9bn in 1990.

All the usual market sectors served today by silicon products are expected to make use of GaAs integrated circuitry. David Wilcox of Plessey expects the first advanced GaAs products within two years, which agrees well with predictions by Harris Microwave Semiconductor and Gigabit Logic, U.S. companies specialising in GaAs chips.

Evolution favours survival of the fittest; GaAs technology will certainly survive. Whether it can conquer a major part of this silicon-dominated world is another matter.

Materials technology

ALAN CANE

simple switch in 1947. It was, some would argue, the major invention of the century. It certainly led, some 20-odd years later to what we now call the microprocessor revolution.

These earliest transistors—which replaced large, expensive, current consuming and heat producing valves—were fabri-

Silicon Valley success

RIDING the wave of success in the custom-chip business is American Microsystems Inc. While other chip-makers have regarded custom devices as a sideline, 75 per cent of AMI's revenues come from tailor-made circuits.

AMI offers several different approaches to custom circuit design—from conventional hand-drawn circuits through circuits built up of standard predefined cells, and semi-custom logic arrays that can be "customised" with one or two layers of interconnection that defined how the circuit functions.

Last November AMI was taken over by Gould, the diversified U.S. manufacturer of electronic and electrical products. According to AMI, the takeover will not change its business plans, and the current management team will stay intact.

Louise Kehoe

Tailor-made chips enjoy a boom

THE MARKET for standard electronic components is in a slump, but sales of "custom" chips—those that are tailor-made for a particular application—are booming.

Industry estimates put the size of the custom chip market at \$680m today, growing to \$1.4bn by 1984. The growth in custom circuits has been brought about by several factors, some economic and other related to semi-conductor technology.

Custom integrated circuits offer many advantages in terms of system performance and reliability over standard components. Custom circuits save money. By placing more of the functions needed for a new electronic system on a single chip, production costs can be reduced.

Custom circuits are more reliable. Reducing components cuts down on the number of possible system failures.

Custom circuits reduce space and power requirements. Again, fewer chips mean a smaller system.

Alternatively, they have been used in the rare instances when standard components cannot meet the performance required for a particular application.

Making considerable use of computer aided design systems, chip-makers can now tailor a circuit for a customer's needs from a library of predefined circuit functions. The resulting circuit may be slightly larger than one designed by hand from scratch, but the cost savings in the design process outweigh the proportionately small disadvantages of additional production costs.

Development time can also be halved to about six months. Another boost has been given to the custom chip market by the widespread acceptance of simplified design approaches pioneered in the U.S. by researchers Lynn Conway (of Xerox) and Carver Mead (of Cal Tech).

The Conway/Mead chip design methodology allows an electronic systems designer to design his own chips with a minimum of training, again using computer aids, and focusing on the system performance of the chip rather than the—often irrelevant—details of optimal chip design.

More than 80 U.S. universities—and several chip manufacturers—are now offering electronics engineers courses based on the Conway/Mead method to teach the systems engineers how to design their own chips. These courses have sharply increased the number of people capable of designing an integrated circuit. Until

last year, the number of chip designers in the U.S. was estimated to be only about 2,000. A vast new market has opened up for "customer designed" chips. Industry estimates suggest that over 40 per cent of custom chips will be designed by systems manufacturers by 1984.

These chips are manufactured at "silicon foundries," more often than not the idle produc-

Custom circuits

ELAINE WILLIAMS

tion lines of the standard chip makers. Intel, one of the latest companies to enter the silicon foundry business, estimates that the market for such services is worth \$135m today, and that it will grow to \$680m by 1985.

For applications in which a full custom circuit cannot be justified—because of cost and volume requirements—another solution is the uncommitted logic array, or gate array. These circuits, which are often called semi-custom circuits, are a matrix of unconnected logic functions. The logic array is "customised" by adding a layer or two of interconnections that define how the circuit performs. Gate arrays offer a speedy—as short as 16 weeks—development cycle and are cheaper for lower volume requirements.

There are, however, some performance trade offs as compared to fully custom devices. The logic array concept was pioneered in the U.K. by Ferranti, but now most of the major chip manufacturers offer a range of logic arrays with different numbers of functions and built using different semiconductor technologies to suit various systems requirements.

Designers still strive to improve the performance of each Rivalry between MOS and bipolar processes

FASTER, smaller, cheaper: these aims are always at the top of a semiconductor designer's list. Since the early 1960s it has been the pattern that every two years the complexity of a silicon chip doubles but the price continues to fall.

Semiconductor designers strive to pack the components on the silicon chips closer together because the electronic circuits can then operate more quickly since the electronic signals have less distance to travel. With memory circuits—used for storing information needed for computers, for example—the aim is to cram more storage space in a smaller area.

At present, it is possible to store 64 k bits of information on a silicon chip and most semiconductor manufacturers are now developing memories four times that size which will push the present technology to its limits. Today the tiny elements which are produced by photolithography and chemically etched can be only one micron (one millionth of a metre wide) in size.

In the future the element will be even less than one micron but the industry will have to use X-rays or electron beams to draw the fine lines that define the size of the thousands of transistors on each circuit.

Technical developments in semiconductors still centre around making silicon chips operate faster and consume less power. This means that there is intense competition between the two main processes—bipolar and MOS (metal oxide semiconductor) which are used to make electronic circuits.

Over the years, however, designers have been striving to improve the performance of both technologies so that the relative disadvantages of both are less apparent. In general, however, bipolar technology still remains superior for applications where digital signals have to be translated into analogue forms. This is necessary when converting from the digital world of computers to the analogue world of industrial machines which relay varying electric currents.

MOS, on the other hand, has found its niche in the world of microprocessors and

Developments

large-scale memories and has generally overtaken bipolar technology for many applications.

In addition to these large memories and microprocessors circuits which can be used in the telecommunications industry are under development. The telecommunications industry is now undergoing changes from electromechanical to completely electronic techniques and this, tied to the growth in automated office systems, is demanding silicon chips which can control the operation of telephone call connections.

Speech recognition and synthesis—where electronics can interpret and reproduce human speech—is an area of fascination and profit. It has been predicted that by the end of the decade more than \$1bn will have been spent on circuits which can carry out these functions.

those involved in their design. For many reasons, companies need special components which require a customised circuit but do not want to pay the price of having it exclusively designed for them. This has resulted in the growing popularity of logic arrays which are half way between a standard circuit and a special design.

Coupled with strides in integrated circuit technology are important developments in connecting components to the printed circuit boards and miniaturising the assemblies on to which the semiconductor and passive components, such as resistors and capacitors, are connected to make the complete circuit.

Hybrid microelectronic circuits, in effect tiny printed circuit boards, have been making steady rather than revolutionary progress over the past few years. Hybrid circuits are made by depositing conductive, resistive and dielectric materials in film form onto glass or ceramic carrier substrates.

Hybrids come in two forms: thick film, where the materials may be deposited by screen printing and subsequent firing in an oven, and thin film, where the circuit patterns are formed by condensing vaporised materials on to the substrates.

New developments in the use of lasers to trim the components in hybrid circuits to meet the design specifications and in photolithography which allows the patterns of the circuit to be drawn by laser are also extending the possibilities of hybrids.

In addition to these improvements passive component manufacturers, who make the resistors, transistors and inductors which form the rest of the circuits have also made important progress in miniaturising their components to fit hybrid circuits without loss of performance.

MULTIFACETED CAPABILITY: THOMSON-CSF COMPONENTS. An international dimension: 14,000 employees, 32 production facilities, Sales: \$650 million. A vast range: Electron tubes, Semiconductors: discrete-IC's, Microwave components, Piezoelectric components, Passive components, Hybrids, Interconnection products. State-of-the-art technology through ongoing R & D. Quality to the highest standards. A commitment to service. THOMSON-CSF. THOMSON-CSF DIRECTION DU GROUPE COMPOSANTS ET TUBES ELECTRONIQUES.

C&K The Primary Source Worldwide. C & K SWITCHES LIMITED. Manufacturers of sub-miniature and miniature switches to the electronics industry worldwide. Send for our complete catalogue:— Cunliffe Drive, Kettering, Northants, NN16 8LF.

GOULD'S MAP FOR GROWTH. Electronics is one of Europe's fastest growing industries, and few electronics companies are growing faster than Gould. In just a little over a decade, Gould has become a \$2 billion force in the American electronics industry. And now we are committed to the same kind of dynamic growth in Europe. With 14 manufacturing plants already in Europe, we are making a whole range of high-technology products for use here and export world-wide. It's all part of our strategy. It's a strategy that means Gould is focusing on the electronic products where our proven technological capabilities give us the strongest competitive advantage. We're concentrating in six market segments where this technology shows substantial growth opportunities. These six key areas are high performance 32-bit minicomputers, factory automation, test and measurement, medical instrumentation, defence systems and electronic components and materials. To learn more about our company, our strategy and our activities, write to Gould, Department A1, Raynham Road, Bishop's Cleeve, Herefordshire CM23 5PF, England. GOULD Electronics & Electrical Products.

ELECTRONIC COMPONENTS VI

Sheer complexity of design makes more demands on automation Aim is flexibility and speed

UNTIL ABOUT 1960, the design, manufacture and test of electronic components and the functional circuit boards on which they were mounted to make electronic equipments was a relatively simple matter. The designers, with their slide rules and basic measuring instruments, essentially used "cut and try" methods on their "breadboards" until the designs were perfected. The outcome was seldom any more than a few hundred components mounted between parallel rows of tagboards bolted to an aluminium chassis. Then, electronic manufacture was entirely performed by skilled ranks of operators armed with soldering irons. Only in the valve industry was much automation apparent, although the other component makers had their specialised assembly machinery.

Testing was really a question of old style "troubleshooting" with test engineers poking about in the chassis with meter probes. Component testing was a relatively straightforward measurement task.

All that was changed by the onset of digitalisation and the invention of the integrated circuit in 1960. Designers applied themselves to packing more and more digital circuits into less and less area of silicon "chip" so that, in conventional testing terms, a serious difficulty arose: large numbers of previously accessible test points had disappeared into a little black box about the size of a cough lozenge.

Circuits became components—and the old style component makers had to think again. Completely new industries were born. Computer aided design (CAD) began to provide much needed assistance to chip and board designers and automatic test equipment (ATE) to assist computer assistance to testing which before long was to become impossible by conventional means.

Today, the CAD market is worth about £120m annually, world-wide and is likely to treble by 1985 according to International Technology Marketing, the U.S. research company. There are now about 1700 CAD installations; between 1976 and 1984 the growth rate will turn out to be some 35 per cent per annum says ITM.

Basically, CAD allows designers to "compose" their circuits on a screen, with rapid auto-placing of circuit segments, computer derived routing of connections (automatic checks for optimal placement of the items for best connectivity) and so on.

But the nature of the CAD offerings for integrated circuit (IC) design is beginning to change. For a long time they

Design and Testing

GEOFFREY CHARLISH

were concerned largely with easing the design problems of the big semiconductor companies making standard circuits.

Standard ICs however, are now no longer all-powerful in the market place and there is increasing emphasis on the gate array and custom chip.

In the gate array the semiconductor chip surface is covered with circuit "cells" that can be connected together with application—specific tracks to suit the customer's objectives. Some cells are wasted. The custom chip however, is fabricated precisely, from scratch, to meet the customer's needs; so production runs must be large.

Both need CAD simply because there can be tens of thousands of active elements on a chip—whole computers in fact—and the task of design

is almost impossible manually. The need for extensive design rule databases held on disc stores, large files of cells (functional circuit elements) and physical shapes plus the need for great precision have all meant that computer assistance is unavoidable.

It is unavoidable, too, because of the shortening life cycle of the modern electronic system product. To remain competitive, systems houses need their chips faster than ever—and this is only possible through design automation. The more recent VLSI (very large scale integration) circuits are proving to be something of a problem due to sheer complexity, so that CAD systems concerned simply with the physical layout of silicon may not prove adequate.

Many CAD companies are moving towards systems in which, for example, the tasks are split between several workstations, some working on logic verification and others on timing problems.

Just as much effort is going into printed board design systems and there are now about twice as many installed as there are IC systems due to extensive use by equipment makers. Such systems are viable provided that about 50 new board designs are performed annually with about 100 ICs per board.

After design comes manufacture and both semiconductor companies and their equipment-making customers have employed automation widely. Using equipment mostly made in the U.S., the chip makers are able to directly step patterns on the silicon wafer (instead of on to a larger photo-master) and carry out most of the subsequent assembly operations under some kind of computer control. Lead bonding to circuit pads is now no longer a matter of female dexterity in many plants.

Given enough throughput, board production is also worth automating. For example, the IC content of a board can be inserted automatically by machines that move the board about on an X-Y table while the ICs are selected from storage stacks and their feet pressed into the board.

Other machines can deal with separate resistors and capacitors from handliners of pre-sequenced components.

Then, the other side of the board is soldered up automatically on a flow soldering machine.

Finally, the product must be tested, be it component or board. For the IC maker the problem is that cost of testing each new high volume device grows with its complexity while at the same time the price per piece tends to drop. Thus, maximum flexibility and speed of testing is the objective, while test quality must be maintained.

Half a dozen companies share the IC/ATE market, now probably worth about £200m per annum according to Dataquest, the survey firm. Challenges appear for the makers all the time and are helping to keep up sales in a market which is not quite what it was in the buoyant 1975-79 period. They include the 64k Ram, 16 and 32 bit microprocessors and bubble memories—the SC industry has to stay on its toes.

There is a frequently quoted rule of thumb in the electronics industry: if it costs £1 to find a faulty component at the component test stage, it will cost £10 to find it on the board, £100 in the equipment, and possibly £1,000 after delivery.

By 1984 the ATE market is expected by Dataquest to reach about £800m, although for the moment the recession-induced drop in semiconductor sales is bound to be reflected in test equipment figures. So the market leaders are locked in battle.

TEXAS INSTRUMENTS

Weathering the recession

Texas Instruments is the world's largest producer of semiconductor components. The company ranks second in the production of discrete components with estimated 1981 sales of \$343m and first in integrated circuits with 1981 sales of the order of \$1,400m.

Recently TI announced lay offs of 3 per cent of its workers world-wide, about 2,700 people, mostly in the semi-conductor and personal computer production divisions. TI is, however, believed to have weathered the recession better than most U.S. semiconductor producers.

The company has the only major, wholly-owned American IC production facility in Japan where it is producing the bulk of its 64k ram devices. TI has been relatively successful in the 64k ram market, taking about 15 per cent of the market.

The company is an active participant in the U.S. Department of Defence VHSIC (very high speed integrated circuits) programme and is leading the field in the implementation of new automated integrated circuit production processes.

TI is by far the largest producer of a wide range of TTL circuits which remain the workhorse of many electronic systems. In the microprocessor area, TI has been particularly successful in the high volume market for low-cost single chip microcomputers that go into all sorts of consumer products.

Apart from components, TI has large businesses in calculators, electronic toys and personal computers.

Louise Kehoe



The RAF's multi-role combat aircraft Tornado and some of its weaponry: big users of electronic devices

Military needs push back the frontiers

MODERN WARFARE—and the development of the necessary weapons to conduct it—has become increasingly orientated towards electronics over the past few decades, and the pace of that development is accelerating.

There is now hardly any single combat arena that does not have its own complex electronics requirements, whether it be for the launching and guidance of underwater long-range ballistic missiles, through the control of anti-tank missiles and laser target range-finding instruments on land, to the acquisition, identification, tracking and attacking of hostile aircraft thousands of feet above the earth and thousands of miles out over the North Atlantic ocean.

The range of military electronic equipment is vast, encompassing not only communications through radios, radars, data transmission systems and other devices, but also to unique items such as "head up display units" to make high-speed aircraft pilots' tasks easier, and automatic terrain-following equipment to enable aircraft to penetrate an enemy's defences by flying beneath his radar screen.

All of this equipment is provided in two broad ways. It is either acquired directly by the armed forces through the Ministry of Defence on the basis of purchases of equipment initially developed by industry for the commercial market, or it is developed specifically for the armed forces in response to precise specifications drawn up by the forces to meet particular requirements.

being done were given, however, in last year's Defence White Paper. For example, it was stated that the RAF's main task in EW is to protect its aircraft from surface-to-air missiles, anti-aircraft artillery and air defence fighters.

To counter such threats, the Tornado in its basic strike version is being fitted with automatic radar warning and jamming equipment, as well as counter-measures against attacking missiles which are themselves equipped with such devices as infra-red homing aids, to enable them to hit the target with great accuracy.

EW is playing an increasing role in the Fleet, and substantial improvements in this area are planned for ships, submarines and aircraft. These include Sea Gnat, a new shipborne system for detecting anti-ship missiles; new shipboard

Electronic defence

MICHAEL DONNE

SIEMENS

Product lines ripe for pruning

When Siemens West Germany's giant electrical concern suddenly disclosed last year that Dr Friedrich Baur, the brilliant engineer who headed the company's components division was quitting, the announcement was perhaps the clearest signal from the company that a far-reaching revision of the divisions' operations was underway.

Dr Baur was the man who was widely credited, both within and outside the company with the successful efforts to develop within Siemens the capacity to produce integrated circuits, and so begin to close the gap which had opened up in the vital field of micro electronic components between Siemens and its rivals in the U.S. and Japan.

Between 1970 and 1980 Siemens Components Division alone spent some DM 500m (£117m), of which about DM 100m came from the West German Government in building up an integrated circuit capacity. By last year the integrated circuits group in the components division was recording annual sales revenues of some DM 500m, about DM 300m of which was own production.

Inevitably, Dr Baur's departure, coupled with reports (since confirmed by the company) that the components group suffered heavy losses in 1981, raised questions about whether the company's ambitious venture in micro electronics was going wrong, especially since it took place against the background of a collapse in the world market.

In fact, according to knowledgeable insiders, it was not the high technology micro electronics side of the components division's business which was the root of the problem but discrete components, the other side of the division. Indeed earlier announcements about the rationalisation of the discrete components business hinted at this.

Inevitably in all areas of its operations Siemens has been tightening its belt and pruning its product lines in order to concentrate its resources. The components division was making around 100,000 different products and has been ripe for this pruning process. Ironically the integrated circuits division within the group had previously undertaken just such a rationalisation programme.

It was the determination of the top executives of Siemens to lighten up operations and improve profits that led to Dr Baur leaving, in spite of his reputation as a technician rather than an embraze the top management policy.

Stewart Fleming

The Ministry of Defence each year buys about 30 per cent of the output of the UK electronics industry, and overall spending by the armed forces on electronic and associated equipment was estimated in last year's Defence White Paper (for 1981-82) to amount to about £769m. Of that sum, radio and electronic components account for about £540m, and "other electrical engineering" for about £145m.

These sums cover equipment purchased for incorporation into naval, land and air weapons systems, but in addition there are substantial sums spent on research and development. Here, the Defence White Paper is a little vague, defining the overall research and development budget at £1.7bn, of which "other electronics" is given as £258m. It is reasonable to assume, however, that some part of the research and development on guided weapons, amounting to £223m, also covers electronics.

In all, therefore, it would appear that something over £1bn of taxpayers' money is pumped into the electronics industry annually to meet defence requirements, and this figure seems likely to increase through the 1980s as the complexity of modern warfare itself increases.

Much of the work being done on defence electronics is secret. This is especially the case with guidance systems for guided missiles, while modern military aircraft such as the Tornado and the Nimrod anti-submarine jets have been described as "airborne electronics workshops" in their complexity.

Electronic Warfare (or EW in defence jargon) is a curious world of its own, in which each side constantly seeks to discover what the other is up to, so as to devise means of countering it, and then to devise further means to counter the counter-measures—or even to devise methods of countering the counter-counter measures. It is this constant updating of what is already being done (often, may it be said, before the equipment has even gone into service) that accounts for the high volume of activity in military electronics development.

Some examples of what is

ITT

Change of strategy

INTERNATIONAL Telephone and Telegraph is a U.S.-based conglomerate whose 1981 sales were \$23.2bn, including revenues from finance and insurance. The company's electronics components group accounts for about 6 per cent of global sales, but some of the company's other activities, such as telecommunications equipment, also involve electronics.

ITT's semiconductor group, with facilities in France, the UK, the U.S. and West Germany, claims to be Europe's largest producer of electronic memories. ITT also makes silicon diodes for use in various consumer electronics applications.

In recent years, ITT has acquired two other electronics-related companies in the U.S., Qume, which makes high-speed printers for word processors, and Courier, which makes video display terminals, mainly for IBM.

ITT is working on a strategy

to bring together its expertise in its various electronic areas and can be expected to enter new areas in the 1980s, although for the moment the company seems to be concentrating upon its core telecommunications business and upon various operational and software developments in electronics.

As a major international telex operator through its ITT Worldcom subsidiary, ITT is also trying to pursue a "communications package" approach to marketing its hardware and software services.

In Europe, the company is also a major consumer of electronics components made by others for use in its television, consumer electronics and appliance businesses. Much of this product is now made in Japan and sold in Europe under the ITT label.

Ian Hargreaves



Where high technology is a way of life.

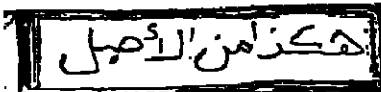
REPUBLIC OF IRELAND

The most profitable industrial location in Europe

Find out why... ring David O'Donovan at 01-629 5341

Today, more and more of the top names in electronics have made Ireland their European base. Apple Computer, Amzihi, Atari, Dataproducts, Digital, Ericsson, Fujitsu, Measurax, Mostek, Varian and Verbatim are just some of the companies already located here.

IDA Ireland The Irish government's industrial development agency has offices in London at 58 Davies St, London W1Y 1LB. Offices also in Dublin, Amsterdam, Paris, Cologne, Stuttgart, Milan, Copenhagen, Madrid, New York, Chicago, Los Angeles, Houston, Cleveland, San Francisco, Boston, Fort Lauderdale, Sydney, Tokyo.



MANAGEMENT

How the law is oiling the wheels for women at work

BY LISA WOOD

CRAFT apprenticeships have long been a male preserve in industry. Clear evidence of entrenched attitudes, according to Dorien Freeman, personnel manager at Vickers Shipbuilding and Engineering, can be found in the fact that "fathers who were former shipyard workers were probably the most vociferous opponents of their daughters taking up apprenticeships at Vickers."

Changes in taking place, however. Today, a total of 90 of the 1,600 apprentices at Vickers shipbuilding works at Barrow-in-Furness, in Cumbria, are female. And, significantly, they have had a salutary effect on male apprentices.

Cases of indiscipline have fallen, says Freeman, and the standard of work and achievement has risen "appreciably" in the company's training centre and at the local college of further education.

The key factor behind this transformation has been the UK's equal opportunity legislation. Before the Sex Discrimination Act was passed in 1975 Vickers had no female apprentices in its craft trades except for a few instrument technicians. "Neither management nor the unions would consider the possibility for example, of women fitters and turners before the Act," says Freeman.

But with its advent the company had seriously to consider applications from girls. "The company was both pleased and sceptical at the increased interest for apprenticeships shown by the local girls," says Freeman. "Pleased because it meant that we could meet our required annual intake figures for the first time in a decade. But sceptical because we were unsure of the boys' reaction to one or more girls in

the training sections, and, more important, how the production departments would cope with them on completion of their first year 'off-the-job' training." Such fears, says Vickers, have been unfounded. Discrimination only became an issue when it was found that some supervisors were giving the girls special privileges, such as allowing them to take their breaks in an office rather than outdoors with the rest of the department's workforce.

While the number of female apprentices at Vickers is still only a trickle, the company appears well pleased with its policies. For strange as it may appear Vickers, tucked away on the Furness peninsula with a predominantly rural hinterland, has always required more apprentices than there were local boys available. Better educated boys, for example, were positively encouraged not to go into the shipyard.

Conversely, more girls in the area sought employment than there were jobs available so the 1975 Act gave Vickers access to a new pool of talent without having to resort to any special measures.

Vickers' experiences emerged at a recent conference on equal opportunities for women jointly sponsored by the Confederation of British Industry and the Equal Opportunities Commission.

Further evidence of the progress being made was illustrated by the action being taken by the Engineering Industry Training Board on the one hand to encourage women into the skilled areas of engineering and on the other to encourage employers to take them on.

Six years ago the training board initiated an experiment in the Midlands and south-east London to try to attract more



Female apprentices at Vickers they have had a salutary effect on the behaviour of their male colleagues

female technicians. Since then, the scheme has been extended to give additional grants to companies if they recruited girls. Some 150 girls were taken on under this scheme last year, bringing the total number of women trainees in the skilled grades to about 200 out of a total of 14,500.

There has been little overt reaction to the few positive measures designed to attract skilled women. According to Pennant Jones, head of research at the Engineering Industry Training Board, "there

has been no serious backlash as everybody in the industry knows that the female intake is very small in relation to the total."

For in the engineering industry the vast majority of women—some 93 per cent—are still employed in the relatively low-skilled categories. Only 2.3 per cent of scientists and technologists are women, only 2 per cent are technicians and only one-third of 1 per cent are craft employees.

Change in the main appears

to be evolutionary—schools perhaps now have a more enlightened attitude towards girls studying the sciences. Of the 476 female engineering trainees in 1980 some 26.3 per cent were scientists and technologists compared with 14.8 per cent of the 9,664 men. In 1975, when there was a much smaller total of women, roughly 11 per cent of both sexes were training for these grades. "We are witnessing a swing which is marginally in favour of women in recruitment although

the numbers are still very small," says Mr Jones.

A shortage of suitably skilled labour, particularly in the south east, was the primary reason motivating Ford when, in the early 1970s, it tried to establish the principle of women doing shift work.

The conflict between management and the unions has continued since then with unions at Ford currently objecting to a Health and Safety Executive dispensation to the company on the issue. "An acute recruitment problem at a certain time in our history was the reason we wanted to introduce women on night shift work," said a Ford spokesman. "There is also the case for equality of opportunity; some women want to do shift work." The denial of the opportunity to do shift work is one of the reasons why the small number of women shop floor employees, earn less than the average at Ford because night shift work pushes wages up by 33 per cent or one sixth over the two shift period.

Unions like those representing the Ford workers give protective reasons for women not doing night work. Unions have been trotting these out over the last decade—at their most extreme they allege that night shift work would break up the family unit, expose women to possible hazards from male colleagues and muggers and rapists on their way to and from work.

The contradiction is that such reasoning is never applied to work like nursing which is done by women working throughout the 24 hours—something which has always been accepted by nurses' unions.

Problems for women are equally evident elsewhere.

Potential "high fliers" in banking are also seeing a very small movement towards positive action. The problem does not arise on entering the profession but later on when trying to combine career and family in a service whose management structure is strongly age-related.

Jane Adams, career planning adviser of the National Westminster Bank, outlined an experimental scheme being run for the bank's "high fliers," the women managers of the future, who also want a family.

Of the bank's 60,000 staff some 50 per cent are women but they are concentrated at the bottom end of the management structure. Banking enjoys what is called a "progressive age-related management structure" and if a person opts out of employment for a few years there is little opportunity of re-entry except at the lower grades.

The new scheme, emphasises Adams, is at a very experimental and tentative stage. It involves a small number of women who leave the bank's employment for up to five years and then, if suitable vacancies arise, can re-apply for a job at their previous grade. The intention is that the bank keeps in touch with the women over the out-of-service period, through newsletters as well as stipulating that relief work of a minimum of two weeks, be completed every year.

"By and large the response from employees has been favourable," says Adams. "In the context of 60,000 staff the scheme is very small. It is for exceptionally able and ambitious women. Most of the staff are sympathetic to their problems."

The majority of women, however, like most men, are not what personnel officers deem high achievers. A recent survey commissioned by the EEC Council of Ministers showed rather surprisingly that British working women felt the least disadvantaged of all EEC women in paid employment. One reason for this may be that more UK women who are in paid employment work in industries that are female dominated, whereas in West Germany, where dissatisfaction was greatest, the opposite is true.

Professor Cary L. Cooper, professor of organisational psychology at the University of Manchester Institute of Science and Technology, who examined the results of the survey, explains that "the segregation of the sexes by industries in the UK may produce less problems and consequently less dissatisfaction."

Professor Cooper reports that the EEC found that women felt the main reasons for their having less opportunities were family commitments, men's attitudes, occupational attitudes, upbringing and the lack of legislation.

They felt therefore that the most important improvements should be the provision of a flexible working week, easier access to child-minding services, easier access to jobs by returning mothers, better distribution of household tasks and a wage for work done in the home.

"Companies and the Government," said Professor Cooper, "will have to come to terms with the growing demands of women to work and fashion corporate and political policies to meet changing social circumstances."

BUSINESSMEN on both sides of the Atlantic do not hold the press in much esteem. Recent surveys in both the U.S. and the UK reveal a high level of dissatisfaction with the way business affairs are handled in newspapers and on the radio and television.

In the U.S. the main complaint is that financial reporters do not accurately research their topics—an observation with which surprisingly large number of journalists agree.

In the UK the attitude towards financial reporting is

equally scathing. Most top executives feel that much media coverage displays a total misunderstanding of how industry operates.

The prevailing climate in both countries, it seems, is one of mutual hostility and suspicion.

The U.S. research, conducted by the American Management Associations, was based on an analysis of six case histories of corporations which were dissatisfied with media coverage and on a survey of nearly 600 chief executive officers, public relations directors and media representatives.

According to the research, U.S. financial journalists also agree with the criticism that inaccurate reporting is due to "aloofness" rather than bias.

While three-quarters of chief executive officers believed that fewer than half of financial reporters understand the workings of business, a majority of the journalists themselves admitted that they should have

better knowledge of aspects such as balance sheets, the general practice of management, and the stock market.

In their apparent defence, financial journalists felt that businessmen generally were not as accessible as they should be and most of them did not understand the workings of the media. For example, businessmen, they said, did not appreciate deadline restrictions and did not understand the term "off the record."

In the UK business attitudes towards the media are equally

critical, although accusations of inaccuracy are not as widespread as in the U.S.; a third of Britain's top businessmen consider business reporting to be generally accurate with another third describing coverage as "acceptably inaccurate."

These are the conclusions from a survey of executives in 800 companies made by the UK

monthly magazine Chief Executive.

The top businessmen complain that much of the media coverage on business issues displays a total misunderstanding of how industry works. They also say that too much attention is paid to industrial glamor and not enough to "ordinary" companies.

Around two-thirds think that an unequal amount of space/time is given to trade union views.

Their other complaints are: There is too much concentration on bad news; Industry successes seem to

be ignored or played down; Journalists seize every opportunity to "knock" British products;

It is taken for granted that British companies are less efficient or less progressive than foreign counterparts.

The Business-Media Relationship available from Management Centre Europe, Avenue des Arts 4, B-1040 Brussels, Belgium, price \$10, or American Management Association, Amacom, 135, West 50th Street, NY 10020, NY, U.S.

Arnold Kransdorf

Publish—and be damned

BUILDING AND CIVIL ENGINEERING

Europe-Africa link project

THE AWARD to a UK-led consortium of a design contract for a tunnel beneath the Strait of Gibraltar to link Europe with Africa represents the latest development in a dream which goes back to 1869. If it comes true, the scheme could make Tangier the gateway to Africa.

The design contract was last month awarded to a consortium headed by Holt, Hay and Anderson International, the Croydun-based consulting engineers, and including INTECSA of Madrid and five Rabat and Casablanca-based companies. It was awarded by Spain.

The decision follows shortly on from Morocco's announcement of a feasibility study to examine the prospects for a fixed link to join the two continents. The study contract went to a French-Spanish-Moroccan consortium while another, to design a suspension bridge, went to a consulting engineering consortium comprising Freeman, Fox and Partners of London, EYSPR of Madrid and INEG of Rabat.

by 1997. While the studies and some preliminary designs get underway, the wider issue of the impact such an ambitious plan would have on the two continents has now arisen and taken on a new topicality.

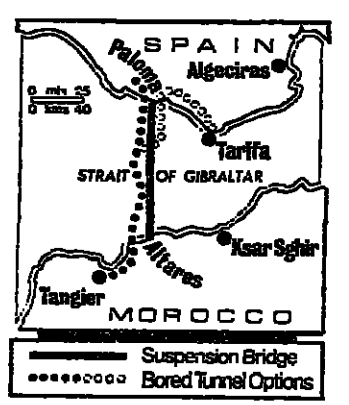
Optimists see the link developing as a positive symbol of the North-South dialogue, generating an intercontinental exchange involving Europe's technology for Africa's raw materials and, in association with the United Nations' Decade 1978-88 trans-African and regional highways plans opening up landlocked African states and encouraging regional and international trade.

Pessimists point to the mythology of permanent links themselves being capable of generating passenger and freight traffic to the political problems of the instability in African states along the feeder routes joining the link at Tangier, the prospect of states holding the link to ransom at any time; and the nebulous benefits that may arise from the ultimate creation of African

trunk routes; and to the attitude of maritime nations 60,000 of whose vessels, including warships, annually traverse the strait.

Above all, they suggest the proposal may be shelved after final recommendations after October because the critical issue of economic feasibility may prove a more daunting obstacle than political problems.

There are signs, however, the project may become more than a mere levanter blowing between the Pillars of Hercules—the British colony of Gibraltar, standing about 25 km from the link's probable site, and the Ceuta peninsula. For Morocco wants the project sited on both an immediate basis and in respect of the distant future when the link might be fed by West African trunk routes.



It is weighing up the project in the light of the Rabat-Madrid-Paris axis and the indisputable fact that France and Spain are its largest trading partners.

It appears the technical problems can be overcome. Matters of jurisdiction, weather, winds, tides, tectonic activity (the 1960 Agadir earthquake disaster was followed by damaging regional rumblings in 1970), geological complexity and even the greatest problem—depths—can be handled, though no marine boreholes have been commissioned.

Others, however, notably the majority of the International Road Federation working party set up in 1977 and which reported in 1979, concluded there was no justification for the link at present.

They believed no commitment should be made until five-yearly surveys to the year 2000 had been made of trans-Mediterranean ferry-borne vehicular traffic. They suggested related road networks be improved and additional marine carriers across the Western Mediterranean be provided if intercontinental vehicular traffic justified expansion meanwhile.

Trans-strait traffic, entering and leaving Tangier and Ceuta in 1978 totalled 3.5m passengers and 318,345 accompanied vehicles. The threefold increase in vehicular traffic ferried across the strait in the nine years to 1978 had been, however, "by no means stable."

Proponents of the link point to the record of a similar scheme: the Bosphorus bridge saw a near-threefold increase in traffic in four years.

The hope is a Gibraltar link would repeat the pattern, though it will require a great deal more than sentiment to see such an immense civil engineering and political challenge through to a successful conclusion.

ALAN ELLIS

Two earth satellite aerials for Telecom

Civil engineering for two earth satellite communication aerials is to be carried out for British Telecom by IDC Group, Stratford-upon-Avon. The new aerials, to be erected at Madley, Herefordshire, will be used to bounce international telephone calls off satellites in geostatic orbit over the Atlantic ocean and Europe. One will also be used to carry European Broadcasting Union (EBU) television transmissions. Each dish-shaped aerial will weigh 138.7 tons and measure 62 feet in diameter. Design and construction of the air-conditioned ground equipment halls and power rooms needed for each aerial is also being carried out by IDC. Completion of the contract, worth £1.6m, is expected in June next year. Our picture shows one of the similar existing aerials at Madley, for which IDC was also responsible.

Critical look at Severn barrage

A MEMBER of the Government's Building Research Establishment has cast doubts on whether construction of the proposed £5.6bn tidal barrage across the River Severn could ever be justified, given the likely cost overrun of the scheme.

Dr Stephen Wozniak, head of the BRE's Solar Technology Programme, said the impossibility of building a full scale model to test the proposal was one of its major disadvantages. "His remarks last week at a conference of the Concrete Society Wales Region at Newport, Gwent, on the construction industry's role in energy, were directed at members of the Sir Robert McAlpine team carrying out research into the project.

They came at a sensitive time with the Department of Energy expected shortly to make a statement on the pre-feasibility study prepared last year by the Severn Barrage Committee under the chairmanship of Sir Hermann Bondi.

Prisoners should make small doors

PRISONERS in British jails are producing some 1850 doors each week. This has incensed the British Woodworking Federation, which says that because of the continuing recession the UK door industry has been hit with widespread redundancies and the threat of further closures.

To be fair, the BWF originally accepted limited manufacturing of doors within EMI Prison Establishments to assist in the rehabilitation of prisoners. At that time demand was outstripping supply.

Now, the BWF has written to the Home Office requesting a temporary total suspension of the manufacture of hardwood exterior doors; cessation of

arrangements to assemble Canadian door stock for sale on the open market; and a moratorium on the release of several thousand doors which it believes are held in stock.

"Full and frank exchanges" have taken place with PRINDUS (the Home Office organisation responsible for prison industries) at which BWF contended that it is insupportable to keep prisoners working at the expense of BWF members' employees.

Being constructive, the Federation has suggested that prisoners should be switched to making kitchen cabinet doors, most of which are imported.

TONY FRANCE

UK CONTRACTS £25m Basildon scheme

JOHN LAING CONSTRUCTION has been awarded the £25m contract for construction of Phase II of Basildon Development Corporation's Eastgate Shopping Mall. The site of 6.75 acres is in the heart of the existing Basildon Town Centre and will consist of a 200,000 sq ft department store for Alders, a 30,000 sq ft fashion store and about 75 unit shops on two levels. Two office blocks totalling 121,000 sq ft will provide accommodation for multinational companies as well as smaller businesses. A 1,000 vehicle car park will be incorporated in the scheme.

Principal shopping provision will be provided in the main mall, some 413 ft in length, in the form of a multi-tiered long gallery, comparable in style to the internationally known Eaton Centre in Toronto. Work is to start soon and completion is due at the end of 1984.

The entire scheme will be funded by The Norwich Union Insurance Group, at an estimated cost of £50m.

Bovis build for Boots

A MANAGEMENT contract worth around £8m to build a warehouse for Boots is being carried out by BOVIS CONSTRUCTION and is due for completion in Spring 1983. The warehouse will form part of Boots' distribution complex at

Besston in Nottingham and will cover an area of around 28,000 sq metres. The building will be 215 metres long, 120 metres wide and 14 metres high, to the underside of the roof and will accommodate high bay storage racking stacked seven high. Bovis has also been awarded a £1.25m contract to build homes for elderly people at Nuns Road, Chester. The contract for the Methodist Homes for the Aged, will comprise 37 flats plus specially equipped accommodation for 15 frail persons.

WORK HAS begun on a big Tesco Superstore at Turnford near Cheshunt, Hertfordshire. The 5,853 sq metre store will be the centrepiece of a £4.3m contract which is being carried out by KYLE STEWART. Included in the contract are four shops, community hall, petrol station and parking facilities for over 600 cars.

CROUDACE CONSTRUCTION has won a £3.7m contract for 206 dwellings at Gasson Wood Road, Dewsbury for Crawley Borough Council. The contract is for 109 two-storey houses and 96 flats in 2/3 storey blocks in traditional construction. Work has started and is due to be completed in June 1984.

A DESIGN/and construct contract valued at about £2.9m has been won by ROSSER & RUSSELL for all mechanical services in the new factory and admin offices of computer company, Systime, of Leeds.

The good news is FERRANTI Selling technology

£15m for McAlpine

FOLLOWING the demolition of a multi-storey car park in Upper Thames Street, London, between Swan Lane and Angel Passage, SIR ROBERT McALPINE & SONS is to build a 10-storey office block for the construction of Companies, which are wholly owned by the Prudential, under a £15m contract.

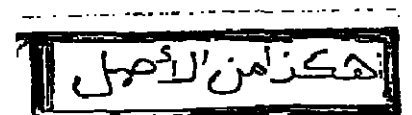
Measuring 64 metres by 46 metres on plan the granite and precast concrete clad building will incorporate a car park. Fully air-conditioned, it will include a private access roadway and a terrace to its River Thames frontage. Completion is programmed for mid-1984.

UNITED KINGDOM Oil Pipelines, through managing agents, British Pipeline Agency, has awarded a contract worth over £4.5m to McALPINE SERVICES & PIPELINES (a member of the Sir Alfred McAlpine Group). Work involves construction of 143 kms of 10 inch diameter pipeline running from Kingsbury, near Tamworth, Staffordshire, to Buncfield, near Hemel Hempstead, Hertfordshire. It is expected that work will be completed by the end of October 1982.

A NUMBER of new contracts just announced by EVE CONSTRUCTION are together worth over £4.5m and include a £2.5m scheme for the construction of seven two-storey blocks with 67 dwellings at Poplar, London, E14 for the GLC.

Other building work is for Elmbridge Borough Council for a housemother block of 31 old people's flats and another eight-flat block at Weybridge, and Hillingdon Borough's improvements and repairs to 44 dwellings at Yiewsley, Middlesex.

LEECH HOMES has just started on a £2m 100 new homes scheme at Leman Street near the centre of Derby using the company's "Country Style" concept. The units will be a variety of one, two and three-bedroom townhomes, plus brand new Unifit units which come completely furnished and equipped aimed at single people who prefer to own rather than rent accommodation.



FINANCIAL TIMES

BRACKEN HOUSE, CANNON STREET, LONDON EC4A 4BY
Telegrams: Finantimo, London PS4. Telex: 8954671
Telephone: 01-248 8000

Monday April 5 1982

THE FALKLANDS INVASION

Argentina: behind the euphoria

By Jimmy Burns in Buenos Aires

Jingoism is not the way

THE ARGENTINE seizure of the Falkland Islands is an outrage. Military invasion is an illegal and immoral means to make good territorial claims, however strong nationalist fervour may be at home. Britain must therefore resort to every viable means to counter the coup de main which placed 1,800 unwilling Falkland Islanders under the Argentine flag on Friday.

The seeming confusion with which British ministers reacted on Friday, as news of the invasion began to harden should not blind one to the fact that a diplomatic success, maybe small, but also significant, has been achieved. The importance of the Security Council vote calling for an immediate Argentine withdrawal should not be underestimated.

Only Panama, with obvious reasons for Latin American solidarity, voted against. The Soviet Union, and its Polish follower, abstained. So did China and, with its own interests in Gibraltar in mind, Spain. What is significant about the vote is that all Third World members of the council supported the British motion. Those are the countries with strong and understandable anti-colonialist convictions of their own. They did not fall for the Argentine case that British possession of the islands was no more than another instance of colonialism.

Britain therefore, is in a position to marshal a powerful coalition of opinion, from Kampala and Kinshasa to Washington and Paris, against the Argentine attack. The Security Council resolution called for a resumption of diplomatic methods to resolve the problem. Provided genuine pressure can be put behind that demand, it offers the most attractive way out of the impasse. Full European support must be secured through the process of political co-operation.

Position of weakness

Flushed as they are with their military success, the Argentine generals will not find that prescription palatable. It is up to world opinion and to those who expressed it in the Security Council to make them see reason. Yet it would be foolish to forget that the United Nations has called before for a negotiated solution with scant success.

The lesson of Friday's invasion is that in the end you cannot negotiate successfully from a position of weakness. Only if world opinion does not merely leave it at the Security Council resolution is there a hope of some righting of that imbalance.

Similarly hard facts need to be considered in discussing the military possibilities. A British naval force operating in the South Atlantic would be stretching its lines of supply to their limit and maybe beyond it. Even if a counterblow were to be struck and were to be successful, the problem of the Falkland Islands would not disappear. Argentine determination to gain possession would be reinforced. The anachronism of Britain seeking to retain control of an area thousands of miles away from its possible sphere of influence and remote from its present national interests would not be removed.

Several solutions

Amid the hubbub it is therefore essential to keep eyes firmly fixed on a viable long term solution. Political morality demands that such a solution should not pass over the wishes of the Falkland Islanders who wish to preserve their traditions.

Several such solutions have been proposed. A condominium was one of them. Buenos Aires turned that down on the historical argument that sovereignty over the islands resides in Buenos Aires as heir to the Spanish empire of long ago. Another idea that failed to find favour was that Argentina should become sovereign in name, but that the Falklands should then be leased back to Britain for a very long period.

One could think of other ways out. A statute of autonomy underwritten by the UN is intellectually conceivable. Provided it were to be properly drafted and secured, it might go far towards meeting the Falklanders' wish to lead their own lives.

Each of the long-term solutions would require both disputants to swallow some of their pride. But they would have the merit of recognising that the Falklanders have rights of self-determination. They would also take account of the fact that geography makes the Falklands dependent to some degree on economic and communications links with Argentina and, in the long run, makes British protection for them a herculean task.

Political differences

The fact of the matter is that the Argentine Government believes that it has created a fait accompli. Buenos Aires will not budge unless the world at large and Britain especially are determined not to acquiesce in that. Argentine vulnerability to economic and other pressures should not be overlooked. A case can therefore be made out, at the very least, for keeping the Argentine Government in doubt about British intentions. If the Argentines know that nothing can happen to them, then they will hardly be likely to entertain the idea of compromise. There should, however, be no mistake about this; it is the Falklanders themselves who would bear the brunt of any attempt to retake the islands.

What is deplorable is that the issue is rapidly becoming mixed up with political differences within Britain itself which have nothing to do with the matter in hand. Not only the pride of the Argentine Government is involved. So is the standing, perhaps even the survival, of the Tory Government in Britain. That does not make for rational action on either side.

In truth, the British Government does have questions to answer. Why was it so evidently taken by surprise? Why had it misread the signals from Buenos Aires so badly that it neither took precautions, nor made a supreme effort to advance by its own chosen route of diplomacy?

The results of negligence cannot be undone by something near panic. Ministerial statements in the first, humiliating hours of the crisis have suggested a determination to drive out the invaders and reoccupy the islands; but to what end? There is no point in a large expenditure of force to reassert a right which, as the Prime Minister herself pointed out, we have not the means to sustain in the long term. It is precisely because no substantial British interest was involved that the crisis was allowed to arise in such a careless way. The danger is that a process of escalation has begun which will be very difficult to control.

IT IS hard to convey the extent and depth of the change that has occurred in Argentina in just three days. Its most poignant symbol lies in the scenes of euphoria that pervaded the streets of Buenos Aires following the Argentine military invasion of the Falkland Islands early on Friday.

In the eyes of many Argentines President Leopoldo Galtieri had become the hero of a historic moment in which the country's armed forces had at last found their raison d'être.

Only a week before thousands of Argentines had converged on the presidential palace in the first major demonstration against a military government since the 1978 coup. Yet on Friday many of the same people linked arms with the same security forces who had previously beaten them to the ground, joyously waving Argentine flags and bringing President Galtieri on to the balcony of the presidential palace to rapturous applause.

The background is necessary to understand President Galtieri's vow that the military will remain in the Falklands and will "go to battle" if and when a British task force arrives. By invading the Falklands the Argentine military solved in a matter of hours what had eluded them in the six years they had been in government: the unification of the nation behind them.

The President's rhetoric should not be underestimated by Britain. When he took power only last December he promised that the "time for words had passed" and that the government "would henceforth be judged by deeds alone."

Galtieri rose through the military hierarchy thanks to his reputation as a tough no-nonsense soldier in the fight against the Montonero guerrillas between 1976 and 1978. His few months of presidential power have contrasted strikingly with the hesitancy of his ineffectual predecessor General Roberto Viola.

President Galtieri may well be a man of action rather than words, but the international reaction to the invasion and the probable economic and military sanctions that may ensue from it over the next few days have put him and his regime in a quandary.

This quandary is exacerbated by the junta's failure to resolve severe economic problems. Argentina's inflation hit a world record—over 131 per cent—last year. Industry is going through its worst recession in over 16 years with large scale bankruptcies and a steady increase in national unemployment figures, now reliably reported to be around 13 per cent.

The Gross Domestic Product plunged by 6.1 per cent in 1981 and there is as yet no sign of economic recovery. Meanwhile the local foreign exchange market, the popular arbiter of Argentine economic performance, has been on a roller coaster for several months, with the peso plunging from 2,000 to the dollar to 11,000 in 12 months of wild fluctuations.

The full significance of the invasion may only just be beginning to penetrate the dense cloud of government propaganda and ultra nationalist excitement which still persists here. It took President Galtieri a whole day to react officially to Mrs Thatcher's counter invasion threat. There was no parliamentary debate as in England, but there was much deliberation behind the scenes.

The Argentines had anticipated a diplomatic victory at the United Nations and the result of the Security Council's vote on Saturday was a major setback. The Argentine foreign ministry had hoped that hours of intense lobbying had ensured



Victorious Argentine troops raise their flag

the support not only of most of the third world but also of some European countries such as Spain, and major powers like the Soviet Union and China.

In the event the Soviet Union, China and Spain abstained, and the third world is far from heralding Argentina as the justified "liberator from colonial rule" as many Argentines had hoped.

Panama's thesis that any military counter attacks against Argentina would inevitably line up Latin American armies behind the Buenos Aires government is utopian, rather than real. Brazil, one of Latin America's major military powers, had supported Argentina's sovereignty claims but refused to condone the invasion. Indeed Brazil may even be prepared to allow its ports as refuelling stops for the Royal Navy if and when it approaches Latin American waters. Similar

feelings are shared by Chile. The predominant consideration of Argentina's Latin American neighbours is the possible future direction of Argentine foreign policy. They fear that any vindication of Argentina's military exploits in the Falklands might tempt Buenos Aires to deal with its neighbours in a similar vein, particularly in territorial disputes like that which exists with Chile over the Beagle Channel.

The reaction of the U.S. has also surprised the Argentine government. Since taking power Galtieri has gone out of his way to forge a strong relationship with Washington, particularly on such crucial issues as Central America. Buenos Aires had never really expected the Americans openly to support the invasion of the Falklands, but they had certainly looked forward to a position of quiet acquiescence.

Developments in the last 48 hours are therefore threatening Argentina with the prospect of international isolation. And besides this there is the possibility of further economic sanctions from Britain and possibly other countries. But on balance most Argentines remain submerged in the "patriotic dimension of the military recovery" of the Falklands. Indeed the financial sanction announced by Mrs Thatcher over the weekend have been brushed aside as pinpricks. The threat of a British military counter attack is still generally dismissed as bluff.

However, independent analysts believe that major sanctions by the EEC and the U.S. would seriously damage the Argentine economy at a time when it is already extremely vulnerable.

Argentina is still heavily dependent on Western credit lines for balance of payments support and foreign banks like the Bank of London and South America and the First National Bank of Boston have a strong profile domestically.

Western countries such as West Germany are not only important suppliers but also participants in key sectors of local industry like cars and energy. Europe also remains an important outlet for meat—one of Argentina's main agricultural exports.

Argentine military officers have boasted that their armed forces could put up a strong defence of the Falklands and severely damage any British invasion fleet, but this smacks of psychology rather than logic. Independent strategists believe that any full-scale military confrontation between Britain and Argentina would almost certainly lead to the destruction of the Argentine navy and the loss of the bulk of the air force. Casualties would be substantial on both sides, but particularly heavy on the Argentine side.

President Galtieri's dilemma is that any climbdown over the Falklands at this stage could well destroy the prestige the armed forces have gained and might eventually precipitate the collapse of the military regime. Argentina could, of course, turn in on itself with a heavily protected economy and with the establishment of wider trade links with countries like the Soviet Union which already takes the bulk of Argentine grain.

Such a strategy however would be in outright contradiction of everything the current regime has stood for—a foreign policy firmly orientated to the U.S. and an economic recovery programme based on foreign investment. And that is to ignore altogether the political repercussions of a humiliating military defeat at the hands of the Royal Navy.

Britain: 'now it is the time for action'

THE SUPREME irony of the Argentine invasion of the Falkland Islands was that it should take place on the same day as the young Winston Churchill was appointed to a new job at Conservative Central Office to sell the party's defence policies to the electorate.

The Conservative Party has always prided itself—above almost all else—on its ability to defend Britain. Now, in an attempt to salvage that reputation, it is in danger of embarking on a course of action which some of its own MPs privately believe is unsustainable.

In the long term, some Tory MPs were saying yesterday that Britain may not be able to defend a possession 8,000 miles away in the South Atlantic, even if it can repossess it. But in the present mood of nationalistic fervour that is not a sentiment many MPs are prepared to express.

Such thoughts, said one MP, "are unthinkable at the moment. Now is not the time for thinking of defeatist talk. It is the time for action."

Indeed, most Tory backbenchers were insisting at the weekend that the Government's credibility depended on getting the islands back. They claimed to be "convinced" that the Government shares this view, and that it is prepared to go to any lengths to reclaim them.

By the end of the weekend, Ministers had raised expectations on the Tory benches to a point where many Tory MPs seemed to regard some form of military engagement as almost inevitable. In the circumstances, the Government's options could be very limited.

The price of failure to get the islands back—or of anything less than a diplomatic sell-out—would be the head of at least one Cabinet Minister, and quite possibly two: the Defence Secretary and the Foreign Secretary. Mr John Nott, the Defence Secretary, more or less

acknowledged as much yesterday on ITV's Weekend World programme, as he responded to his own backbenchers with increasingly hawkish noises.

Saturday's debate showed the full extent of the rage on the Government benches; not since the Suez crisis has a Government Minister caused such despair among his backbenchers as Mr Nott winding up. As soon as he sat down, the Government whips began rushing round in an attempt to persuade certain influential moderates that the worst thing for the party now would be resignations.

As a result, the message to come out of the packed private meeting of Tory MPs after the debate was that the party was not looking for resignations now. Initially, however, both Lord Carrington and Mr Nott got a very hostile reception indeed from the meeting. Successive speakers apparently made it clear that the Government should stop at nothing to get the

Islands back. The Government, they said, should be prepared to declare war as soon as the task force left port. The time for long term diplomatic solutions, it was said, was once Britain was back in control. It was apparently only after the two ministers had appeared to take this message on board that they got the conditional support of the meeting.

Even so, certain very vocal groups of MPs are still gunning for both Mr Nott and Lord Carrington. Mr Nott has had problems with certain sections of the Conservative defence establishment since taking over as Defence Secretary last year.

A highly intelligent man, with what one of his colleagues describes as a "low flash point", he does not suffer fools, or opposition gladly, and he has had little sympathy for those Tory MPs who insist that he is set on cutting Britain's conventional defence spending

In the same way, while most Conservative moderates believe that Lord Carrington has been an excellent Foreign Secretary, some rightwingers believe he has consistently sold Britain short. For this group, the Rhodesian settlement was a disaster. There has long been a suspicion among those MPs interested in the Falkland Islands that the Foreign Office was bent on getting rid of them.

All these suspicions contributed to the sense of outrage in Saturday's debate. But the anger went far beyond that minority of MPs who normally concern themselves with such matters. As Mr Michael Foot pointed out in his most effective performance since taking over as Labour leader, there was a sense that the Government "had betrayed" those who depended upon it.

And that is the kind of allegation which really hurts the Tory Party. To answer it, the Government now seems to have committed Britain to taking whatever military action is necessary to reclaim the islands. But the weeks it will take to get a task force to the South Atlantic is a long time in war as well as politics.

Tory MPs were saying after Saturday's backbench meeting that if the Government did succeed in reclaiming the islands it could yet emerge with its prestige not only intact, but enhanced. But some ministers, with painful memories of Suez, were saying privately that the Government could be digging a hole from which there may be no graceful way out.

Their hope was that in the time it will take to get the task force to the South Atlantic, the present patriotic fervour might be tempered by pragmatism, which could yet hold the party back from a full-scale war.

Elinor Goodman

Men & Matters

England expects...

Did Margaret Thatcher have a premonition? I ask. Though the Prime Minister apparently got no advance warning from the Foreign Office of the Falklands invasion, some weeks ago she suddenly despatched an urgent order to the National Maritime Museum in Greenwich.

"Send me Admiral Lord Nelson," she commanded. As the Royal Navy sails belatedly from Portsmouth today, the Prime Minister must be musing about what prompted her to seek a portrait of Britain's most famous sailor to hang in No 10 Downing Street.

Up to then her gallery had been crowded with scientists and engineers, reflecting her preoccupation with the industrial and economic scene.

The museum, which "has more Nelsons than we know what to do with," sent Mrs T.

Frow's fight

Much of the parliamentary heat over the Falklands fiasco has been generated from a small first floor office in London's Victoria. This is the base of Air Commodore Brian Frow and his Falkland Islands Committee, set up in 1968 as an emergency body to handle an earlier scare and which has been lobbying since in the islanders' interests.

The committee comprises members of all the political parties, including half a dozen Tory knights. Frow took over five years ago. An ex-RAF man, he was British defence attaché in Moscow and spent a number of years in the Cabinet Office on intelligence work.

Frow was also in command of RAF Hong Kong—where he spent some time chasing pirates off the China coast—and has been bitterly opposed to the Foreign Office idea, floated in quieter times, of an "Antarctic Home Kong solution" for the Falklands. Under this plan, sovereignty would have been ceded to Argentina and the sheep-strewn islands leased back.

In recent weeks, Frow has attacked the FO for its neglect of the islands. He now wants a graduated military response. His office is busily gathering

information to help the landing of a British task force. "We have been getting people together who know the terrain, the weather and the moods," his assistant Sukey Cameron told me yesterday.

Teddy Archibald, Greenwich's Curator of Oil Paintings, describes this as "an attractive thing" showing Nelson "with just a Bath and no hat"—a Bath, Order of that, is.

It was delivered to Downing Street two weeks ago and has already been hung there. Whether the Prime Minister will be able to live comfortably beneath the Admiral's gaze now will presumably depend on the outcome of events in the South Atlantic.

What must surely be Britain's smallest building society, with total assets roughly those of a couple of three-bedroom semis, celebrates its 90th anniversary this year.

The City and District Permanent, set up as a mutual benefit society by employees of Birmingham Corporation in 1892, now has about 100 investors, assets of £48,000 and £12,000 to lend.

President Derrig Ferguson told me that, in fact, the society lent nothing in 1980 and only about £800 last year. "The rise in house prices over the past few years has taken them quite out of our reach now," he says. "We lend largely for garages and bathroom extensions."

Though there are no restrictions on who can invest in, or borrow from, the society, most of the people involved are employees of British Gas. Ferguson, a management development officer with the West Midlands Gas Board, and the other six directors draw no pay from the society. Almost half of the annual management expenses go in auditors' fees.

Just how much longer the society can survive is uncertain. But Ferguson says the society's resources, at least, should earn it a place in the Guinness Book of Records.

"We'll Keep On Rollin'" shouted the banner headline in Friday's New York Daily News. But it could be quite a rough ride under its prospective new proprietor Joe L. Allbritton. The Texas millionaire has 30 days in which to sew up a

House-room

What must surely be Britain's smallest building society, with total assets roughly those of a couple of three-bedroom semis, celebrates its 90th anniversary this year.

The City and District Permanent, set up as a mutual benefit society by employees of Birmingham Corporation in 1892, now has about 100 investors, assets of £48,000 and £12,000 to lend.

President Derrig Ferguson told me that, in fact, the society lent nothing in 1980 and only about £800 last year. "The rise in house prices over the past few years has taken them quite out of our reach now," he says. "We lend largely for garages and bathroom extensions."

Though there are no restrictions on who can invest in, or borrow from, the society, most of the people involved are employees of British Gas. Ferguson, a management development officer with the West Midlands Gas Board, and the other six directors draw no pay from the society. Almost half of the annual management expenses go in auditors' fees.

Just how much longer the society can survive is uncertain. But Ferguson says the society's resources, at least, should earn it a place in the Guinness Book of Records.

Though there are no restrictions on who can invest in, or borrow from, the society, most of the people involved are employees of British Gas. Ferguson, a management development officer with the West Midlands Gas Board, and the other six directors draw no pay from the society. Almost half of the annual management expenses go in auditors' fees.

Just how much longer the society can survive is uncertain. But Ferguson says the society's resources, at least, should earn it a place in the Guinness Book of Records.

Though there are no restrictions on who can invest in, or borrow from, the society, most of the people involved are employees of British Gas. Ferguson, a management development officer with the West Midlands Gas Board, and the other six directors draw no pay from the society. Almost half of the annual management expenses go in auditors' fees.

Just how much longer the society can survive is uncertain. But Ferguson says the society's resources, at least, should earn it a place in the Guinness Book of Records.

Though there are no restrictions on who can invest in, or borrow from, the society, most of the people involved are employees of British Gas. Ferguson, a management development officer with the West Midlands Gas Board, and the other six directors draw no pay from the society. Almost half of the annual management expenses go in auditors' fees.

Just how much longer the society can survive is uncertain. But Ferguson says the society's resources, at least, should earn it a place in the Guinness Book of Records.

Some of the worst wounds...



are the ones that don't show

It used to be called shell-shock. Now we know more. We know that there are limitations to the human mind. Soldiers, Sailors and Airmen all risk mental breakdown from over-exposure to death and violence whilst in the service of our Country. Service... In keeping the peace no less than in making war.

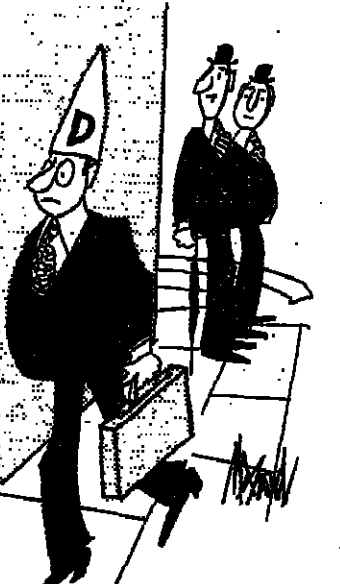
We devote our efforts solely to the welfare of these men and women from all the Services. Men and women who have tried to give more than they could.

Some are only 19, a few are nearly 90 years of age. We help them at home and in hospital. We run our own Convalescent Home and, for those who are homeless and cannot look after themselves in the community, our Hostel gives permanent accommodation. For others, a Veterans' Home where they can see out their days in peace.

These men and women have given their minds to their Country. If we are to help them, we must have funds. Do please help to repay this vast debt. It is owed by all of us.

"They've given more than they could— please give as much as you can."

EX-SERVICES MENTAL WELFARE SOCIETY 37 Thurloe Street, London SW7 2LL. Tel: 01-584 8688



"Isn't he with the Ministry of Defence?"

مركز الأمل

Observer

THE U.S. PRESIDENCY

a Why Reagan's support is sliding

By Reginald Dale U.S. Editor in Washington

"IN SHORT, MR PRESIDENT, you have betrayed those Americans — and among them some members of our union — who voted for you on the basis of the promises you made."

President Ronald Reagan is "likeable" according to 85 per cent of Americans: Time Magazine opinion poll.

"Reagan Stinks," very drunk lady on Denver, Colorado bar stool.

"The days of sensational, quick victories are mostly behind us. Now we move from the glamour of initial commitment to the grail of the long haul."

Fifteen months into his Presidency, President Reagan is losing his image of amiable undependability.

His opponents ridicule him almost every time he opens his mouth, and last week's much-maligned Press conference did little to repair the damage.

Mr McBride listed five specific areas of economic policy in which he said Mr Reagan had broken campaign promises.

A Florida state agent admired him for sticking to his principles — notwithstanding the disastrous collapse of the housing market.

A girl working in a Mid-Western flower shop could not care a hoot about his economic policies, but condemns him for failing to support the equal rights amendment for women.

A black taxi-driver is strongly opposed to, even frightened by, Mr Reagan's policies, but thinks the President is reasonably all right.

"These are fairly representative comments. Almost everybody has at least one reason for disliking Mr Reagan's policies and disillusion is beginning to show up strongly in the opinion polls."

The most recent New York Times/CBS Opinion Poll, taken in mid-March showed that the number of those approving Mr Reagan's handling of the presidency had fallen to 43 per cent, less than the 46 per cent who approved of Mr Carter's performance at a similar stage of his term of office.

The 43 per cent approval rating compared with 49 per cent in January and 67 per cent a year ago — a figure that was almost certainly inflated by sympathy following the March 30 assassination attempt, the anniversary of which Mr Reagan "celebrated" if that is the right word, last week.

U.S. pollsters, however, caution that the figure must be seen against a trend in recent years under which each President loses approval just a little faster than his predecessor.

Mr Reagan may be sliding more steeply than Mr Carter, who lost standing slightly faster than President Nixon, who, in turn, lost public esteem more quickly than did President Johnson.

If true, this is not much of a comfort to Mr Reagan, or to Republicans generally as November's mid-term elections loom closer.

Things have not gone according to plan. On the economic front, neither Mr Reagan, nor the big business interests that supported him so unquestioningly last year, expected recession to prove so obdurate.

Mr Reagan's policies, but it is increasingly desperate over the high interest rates he has to pay on his second mortgage.

These are fairly representative comments. Almost everybody has at least one reason for disliking Mr Reagan's policies and disillusion is beginning to show up strongly in the opinion polls.

U.S. pollsters, however, caution that the figure must be seen against a trend in recent years under which each President loses approval just a little faster than his predecessor.

Mr Reagan may be sliding more steeply than Mr Carter, who lost standing slightly faster than President Nixon, who, in turn, lost public esteem more quickly than did President Johnson.

If true, this is not much of a comfort to Mr Reagan, or to Republicans generally as November's mid-term elections loom closer.

Things have not gone according to plan. On the economic front, neither Mr Reagan, nor the big business interests that supported him so unquestioningly last year, expected recession to prove so obdurate.

Mr Reagan's policies, but it is increasingly desperate over the high interest rates he has to pay on his second mortgage.

These are fairly representative comments. Almost everybody has at least one reason for disliking Mr Reagan's policies and disillusion is beginning to show up strongly in the opinion polls.

U.S. pollsters, however, caution that the figure must be seen against a trend in recent years under which each President loses approval just a little faster than his predecessor.

Mr Reagan may be sliding more steeply than Mr Carter, who lost standing slightly faster than President Nixon, who, in turn, lost public esteem more quickly than did President Johnson.

If true, this is not much of a comfort to Mr Reagan, or to Republicans generally as November's mid-term elections loom closer.

Things have not gone according to plan. On the economic front, neither Mr Reagan, nor the big business interests that supported him so unquestioningly last year, expected recession to prove so obdurate.

Mr Reagan's policies, but it is increasingly desperate over the high interest rates he has to pay on his second mortgage.

These are fairly representative comments. Almost everybody has at least one reason for disliking Mr Reagan's policies and disillusion is beginning to show up strongly in the opinion polls.

U.S. pollsters, however, caution that the figure must be seen against a trend in recent years under which each President loses approval just a little faster than his predecessor.

Mr Reagan may be sliding more steeply than Mr Carter, who lost standing slightly faster than President Nixon, who, in turn, lost public esteem more quickly than did President Johnson.

If true, this is not much of a comfort to Mr Reagan, or to Republicans generally as November's mid-term elections loom closer.



President Reagan 'facing a high disapproval rating'

Administration expect interest rates to remain so high for so long. Even the faster-than-expected drop in inflation, the one bright spot in a sombre economic picture, has had the ironic effect of compounding the Administration's difficulties with the Budget deficit.

Profits and incomes are not yielding the tax revenues on which the original budget calculations were based.

If deficit estimates don't matter much to Mid-Western flower-sellers, they certainly do to Wall Street and the business community.

Two weeks ago, the prestigious Business Roundtable, representing the captains of U.S. industry, told Congress of its deep concern that the projected deficits, unless dealt with promptly, would encourage continued high interest rates and slow down economic recovery and growth.

A recent poll of members of the Wall Street investment community conducted by the

American Stock Exchange showed that only 41 per cent "strongly approved" of the President's economic programme, compared with 67 per cent a year ago.

The foreign policy quagmire in which the Administration is now caught — involving particularly El Salvador and the rest of Central America — is also a surprise.

Many Administration officials now bitterly regret that one of Mr Alexander Haig's first acts as Secretary of State last year was to catapult El Salvador into the headlines as a key test case of America's ability to resist worldwide forces of Marxism-Leninism.

Another poll 10 days ago suggested that six in 10 Americans believe the U.S. has already gone too far in El Salvador simply by sending 55 military advisers.

Seven in 10 would oppose any further military aid — even though a large majority agreed that success for the Left-wing guerrillas would lead

to the collapse of other Latin American Governments and endanger U.S. national security.

An astonishing 42 per cent said they do not believe Mr Reagan's current intention of not sending U.S. combat troops to El Salvador, and more than 80 per cent said they would be against such a move.

Asked if they would support young men who resisted a draft to fight in the country, 51 per cent said they would.

The Administration has also been nonplussed by the strength of the campaign for a freeze on nuclear weapons — even in Right-wing Republican strongholds — that has now surfaced noisily in Congress.

Mr Reagan backed one watered-down version of the freeze proposal at his news conference last Wednesday, but his response has been criticised as too little and too late.

No one has yet produced a convincing reason for the phenomenon, although it is obvious that loose administration talk about nuclear war-fighting can hardly have helped.

The Washington Post/ABC News Poll also found that 45 per cent of Americans believed the chances of nuclear war had grown since Mr Reagan assumed the Presidency.

Forty-six per cent felt he had not done enough to limit the nuclear arms race.

Partly in response to this widespread sentiment and stronger fears in Western Europe Mr Reagan took to the television screen last Wednesday for the first time in the peak viewing hour of 8.00 pm. It was a gamble and far from clear whether it paid off.

He came over as unusually unsure of himself and typically challenged by his Democratic opponents. The old magic — even the familiar home-grin — was missing.

The reason for the change in format was partly a growing feeling in the White House that the Press, and particularly the big three television networks, do not give Mr Reagan a fair deal.

His eight previous Press conferences, all in the afternoon were in media jargon, "filtered" through the main evening news programmes. The White House staff, and Mr Reagan himself, argue they were unfairly edited to show him at his worst.

It is ironic that Mr Reagan should have become disenchanting with the networks, to whom, in his normal role as a star television performer, he owes so much — possibly even his Presidency.

Two weeks ago, he publicly complained that "downbeat" news coverage had delayed the economic recovery and asked: "Is it news that some fellow out in South Succotash someplace who had just been laid off should be interviewed nationwide?"

Succotash, an American Indian dish made of maize and beans, was inevitably sought out by the Press. They succeeded in unearthing a Succotash Point in Rhode Island, where they found three people unemployed, and had a field day.

Mr Reagan's image problem is compounded by his failure to shake off the impression that he is unconcerned about the poor, the blacks, the underprivileged and even the ordinary American working man.

While he tries hard to correct this, it never quite seems to come off.

His anecdotes are fast becoming famous. Last month he was reported to have told a story about a young man who used food stamps to buy an orange and with the change bought a bottle of vodka.

There seems to be absolutely no evidence of such an event. His deafness is also reported to be getting worse, and he is too proud to ask people to repeat themselves if he does not hear them the first time.

In every speech he now stresses the theme of social "fairness," to correct his uncaring image. His aides say they are trying to steer him towards "people events," such as his sudden appearance last month at flood-stricken Fort Wayne, Indiana, where he stood briefly in a line of rescue workers passing sandbags.

Not everyone is impressed by this. But it would be wrong to conclude that he has totally lost his charisma or that all his supporters have deserted him.

In the great conservative heartlands of America there are still plenty of people who are prepared to give him more time. But equally, as another recent poll showed, the majority of Americans do not want him around for another four years after his first term expires at the beginning of 1985.

Lombard Lead: more facts are needed

By Sue Cameron

THE ISSUE of whether or not Britain should switch to unleaded petrol is a complex one. Some say the medical evidence is strong enough to justify a ban on lead additives in fuel. Others have serious doubts about the worth of the research that has been done so far.

They rightly point out that there are many other sources of lead besides petrol fumes.

The costs and political implications of going to lead-free petrol in the UK mean that almost everyone concerned has an axe to grind.

The grinding is becoming an increasingly noisy and public business. This makes it all the more remarkable that the facts of the case — measure though they may be in some instances — should be so hard to come by.

The UK automotive industry, for example, has evidently made out to the Government a powerful case against unleaded petrol, arguing that the total cost of such a move to car manufacturers could be as high as £350m.

It has embroidered its case with the threat that BL might have to be given yet more taxpayers' money to re-design engines so they could run on unleaded petrol.

BL itself will not say how much it spent on converting its Jaguar XK engines to take unleaded petrol so they could be exported to the U.S.

Does BL not know? If not, why not? Or could it be that the figures might run counter to the industry's general propaganda line? Conversion costs can vary considerably from one type of engine to another and there might be little point in trying to extrapolate from a single example.

But BL could draw attention to these caveats itself. Reticence merely leaves the field wide open to the motor manufacturers' opponents in the unleaded petrol lobby.

BL is open company with the Department of Health. A request for a list of the research studies published since the Government-sponsored Lawther report two years ago, drew a straight refusal to provide any information.

(CLEAR, the Campaign for Lead Free Air, was happy to give full details.)

It is understandable that government press offices should shy away from offering comment on controversial issues. But should it not be part of their job to supply any available facts when asked, both in the public interest and in the interests of their political masters?

In the 1970s the legal limits on lead in petrol were progressively reduced by 0.05 grams a time — a process that was contemptuously referred to as "salami-slicing."

The Government reckons it has taken a bold initiative with its plans to lower the limit from 0.4 grams of lead per litre of petrol to 0.15 — a cut of 62.5 per cent. But instead of praise, it is finding itself faced with mounting hostility from worried parents.

The Government gave its reasons for reducing rather than banning lead in petrol during a comparatively brief Commons debate. But if it is to convince the public of its case and assuage what could be unnecessary fears, it should make available all the evidence on which its decision was based, including any relevant information it received from companies such as BL.

It should also strengthen some of its departmental press offices — which vary widely in their competence. One of the main ways in which governments can reach a wide audience is via newspapers, radio and television. Opportunities to disseminate factual information — particularly on a subject that so intimately concerns people as children's health — should be seized with both hands.

Supporters of CLEAR may or may not be right in demanding a simultaneous government commitment to both a reduction of lead in petrol and a switch to unleaded fuel for new cars. But their appeal has certainly struck a chord — witness the findings of the latest MORI poll when 77 per cent of those questioned were found to favour lead-free fuel, even though this would push up petrol prices.

Unless all the interested parties — and most notably the Government — are forthcoming with their facts, CLEAR will win the argument by default. That is not the way for an issue of this importance to be settled.

Letters to the Editor

A radical alternative to the problems of the CAP

From Mr V. Gaskell

Sir — Your editorial "A better way to help farmers" (March 30) comes at a most opportune moment.

In the wake of Denmark's unfortunate foot and mouth in Fünen — we in Britain's pig industry await with trepidation those extra pigs converted to bacon which other more protective countries have refused to accept.

Those pigs will reduce our prices, so we the British pig industry will be helping to pay for their disaster.

So long as the Common Agricultural Policy makes the more fair playing field countries into sacrificial lambs, public opinion will rear against the EEC, and passions in Brussels will vary from high-decibels to deepest gloom.

The concept of equalising food production circumstances in countries as varied as those in the EEC is ridiculous. Any one of the remotest understanding of agriculture knows that temperature, moisture and light are the essential natural elements in growing things and that man adds fertilizer and tills the ground. Even the EEC cannot make it rain harder in Sicily or grow olives in Ulster.

The sooner politicians face up to reality and accept that the concept of equal opportunity in farming throughout the EEC is unfair and involves either the destruction of parts of its existing structure or enormous subsidy, the more likely we are to be able to look forward to a progressive, politically united Europe fulfilling the EEC's original ideals.

If however sectional interests in one state triumph over those in another, disillusionment and disunity must follow — in our case the pig sector will decline. Negative attitudes will replace positive ones and we will cease to have the incentive to go out into the market place to sell our bacon and expend our industry.

Vaughan Gaskell, Gaskell Bros, Woolston, Warrington, Cheshire.

From Mr D. Patchett

Sir — Your leader of March 30 was right to highlight once again the problems associated with the common agricultural policy (CAP).

It has been argued that past developments in the Community's agricultural policies, and the obvious unwillingness of policy makers to undertake major reforms, are evidence that there is no real alternative to today's basic principles of agricultural policy.

But there is, as you point out, a radical alternative, namely direct income support. This should, notwithstanding the problems associated with its establishment, enable a more correct economic balance to be struck between the influence of price on earnings and their impact on production.

The variety of demands made on the CAP surely requires a more flexible use of the present instruments and the use of new measures. Therefore it is time that the present dual function of the CAP was ended and a more equitable and less wasteful policy be introduced.

D. M. Patchett, University of Oxford, Institute of Agricultural Economics, Dorington House, Little Clarendon Street, Oxford.

Divestment and Lloyd's brokers

From Mr A. Smallbone

Sir — John Moore (March 29) comments that the Government believes that there is not the same conflict of interest where brokers own underwriting agency companies writing for company securities that is thought to exist when the security is provided by underwriting members of Lloyd's.

"Brokers own the capital they provide for their non-Lloyd's agency activities..." Parliament may well believe this, but it is not necessarily so. Some brokers own the capital of insurance companies for whom an agency subsidiary conducts the underwriting, but it is more often the case that the owners of the capital are every bit as distant and separate from the ownership of the agency as are members of Lloyd's.

If the public interest were really at risk in permitting brokers to continue to own Lloyd's managing agencies, it is hard to see why it should not be equally exposed where most company agencies are concerned.

Happily for the public at large it is unlikely that there is a real conflict of any consequence anyway. The theory is that a broker may "feed" business to underwriters — whether they are Lloyd's or companies cannot matter — "controlled" by that broker at higher premiums than could be obtained by a broker who had no interest in the commissions to be earned or underwriting. It could happen, but since to behave in that way would be to invite competition from other brokers, only a very naive broker would be likely to try it, and naive brokers have long vanished from the scene.

A more likely "conflict" arises the other way round: that a broker would use his influence with an underwriting venture to obtain better terms than an independent underwriter would be prepared to quote, but that would be advantageous to the insuring public and will happen whether or not there is divestment. It is good old-fashioned market clout, and underwriters have lived with it (and coped with it) — all their working lives, since it depends for its success not upon "control" but upon the profitability and size of a broker's account, irrespective of "ownership" of any agency, Lloyd's or companies.

Alan Smallbone, 30, Temple Fortune Lane, NW1.

Factors in current share prices

From the President, Chase National Policy

Sir — In commenting on the Dex examination of the pros and cons of dividends, Mr R. A. Hammond — Chambers (March 29) asserts that U.S. directors follow a dividend policy of less is better than more. It only that were true. Only rarely is dividend coverage greater than 23.

More importantly, he asserts that all savings should rightfully be paid out as the just property of shareholders, especially because retained profits have not been capitalised in company share prices. Clearly, share prices have performed poorly. But had dividends not been paid, the serious research on the market's behaviour indicates shares would have declined by that much less.

Today's share prices are based on two principal factors: expected future corporate returns measured in terms of free cash flows distributable to investors over time, and the risk associated with generating FCF, described as a capitalisation rate or required rate of return. We believe that it has been a substantial increase in the second factor, much more than a decline in the first

factor, that has been responsible for poor share price performance. Thus, as interest rates have risen, as lenders have demanded higher returns, equity investors who bear even more risk likewise have demanded higher returns. Since expected FCF has not kept pace with required returns, shares have declined in price in order to offer new investors adequate returns based on lower entry prices.

Joel M. Stern, Chase Manhattan Bank, Chase Manhattan Plaza, New York, New York 10081.

What about the gamblers?

From Mr M. Wells

Sir — Before the excitement over indexed gilts dies down completely may I make a plea for the Government to adopt a more innovative approach to funding. Indexed stocks appeal to the risk-averse investor who is prepared to accept a lower real return than he would on ordinary gilts because of the reduced risks involved.

But what about the gamblers among us? Low coupon stocks are more volatile than high coupon stocks and those who buy risk will buy these at a premium because of the added excitement. Indeed there is no reason why we should not have

In a position to comment

From Mr W. Tyler

Sir — The correspondence in your columns (March 26 and 31) concerning Bristol City Football Club appears to me to be entirely appropriate as only at Ashton Gate, home of Bristol City, have I stood on the terraces next to a supporter who has filled in the time before kick-off by studying the Financial Times.

William Tyler, 17, Beumaris Crescent, Hazel Grove, Stockport.

100,000 BUSINESSES USE THIS CARD TO CONTROL AIR TRAVEL EXPENSES. LEARN THE 7 REASONS WHY.

The Air Travel Card has earned an unparalleled reputation as an air travel expense control system since it was introduced 45 years ago. Today, it is an integral part of the accounting systems of over 100,000 businesses — from New York to Singapore.

This is the card issued by the airlines of the world, and used by the businesses of the world... those that have a head start on controlling air travel expenses.



If your company is using the Air Travel Card system now, you know how invaluable it is. If your company is not using the system, here are some facts you should consider.

SEVEN REASONS.

- (1) Direct Billing. Your company is billed directly by the card-issuing airline for all employee travel charged to the card.
(2) Restricted to Air Travel Related Charges. Other travel and entertainment charges will not appear on your air travel statement because the card is restricted to air travel and related charges only.

- (3) Flexible Billing. The air travel billing you receive is designed to fit your needs. You may even qualify for customized billing.
(4) One Statement. Your company receives one statement for all air travel charged during the designated billing period.
(5) Controlled Use. Only the employees you designate can use the card. This enables you to stay within budget.
(6) Worldwide Acceptance. The Air Travel Card is accepted by over 200 airlines worldwide.
(7) Individual or Designated Use. Finally your cards can be coded to designate which employees may purchase tickets for themselves only and which may purchase tickets for others.

EMPLOYEES LOVE IT.

Employees of your company will appreciate the Air Travel Card because it is instant identification throughout the world.

It is a statement about a person's position in the world business community... and that can come in very handy. Furthermore, it eliminates the need for charging business flights to your personal bank account or credit card.

And employees are never stranded. Their cards are accepted by airlines throughout the world. They are, in

fact, the cards issued by the airlines themselves, so nothing could be more welcome.



Present the card, receive your tickets. It's that easy. ASK YOUR AIRLINE OR TRAVEL AGENT FOR DETAILS.

Show this advertisement to your company financial manager. If you are the financial manager, contact the sales office of any major airline, or complete the coupon below.

And find out how right over one hundred thousand companies can be.



OWN THE SKY

Yes, I am interested in knowing more about today's Air Travel Card. Send me more information. Name, Title/Position, Company, Business Address, Phone Number, Mail to: The Air Travel Card, Bldg. 1, Etterbeek 1 1040 Brussels, Belgium

Companies and Markets

INTERNATIONAL CAPITAL MARKETS

INTERNATIONAL BONDS

Offered only business in Mexican floaters

AT FIRST there were only rumours: In hushed tones dealers in the Eurodollar floating rate note market passed the word that they were pulling out of trading Mexican paper.

But now the rumours have been confirmed as reality: A number of the leading dealers have stopped making a market in Mexican floating rate note issues (FRNs).

Although the cessation of such trading is not of major consequence to the entire Euro-market, it can do little good for the gradually deteriorating name of Mexican borrowers in both the bond and credit markets.

The main reason for the recent halt by several market-makers is the growing illiquidity of Mexican floating rate notes. There are several factors behind this:

● The economic image of Mexico has become tarnished over the past few months in view of the fall in its oil price and the devaluation of its currency and the country's growing budget requirement.

● Many banks, the ultimate buyers of the FRNs, are "falling up" with Mexican paper. "We are up to our eyebrows," commented one banker.

● The recent surge in new FRN issues (see chart) has led some dealers to cut their weakest and least liquid paper and move to other issues. Mexican paper has suffered.

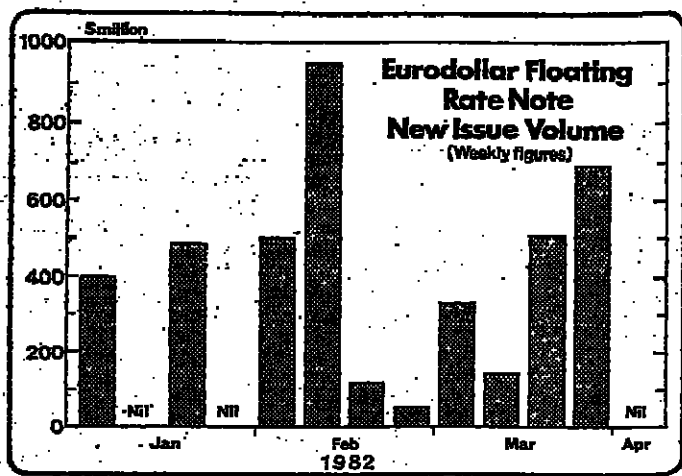
● The effective margins on Mexican floating rate note paper have risen and the prices have fallen correspondingly. Many investors have switched to higher yielding fixed-rate Mexican paper such as the recent 17 1/2 per cent Banobras issue.

● Some Euro-market houses have decided to support only the Mexican FRNs they have actually managed.

The result of all this is that the trade in Mexican FRNs is no longer a two-way business. Several traders report that business has turned into "offered only."

Six months ago the average spread of a standard Mexican floater may have been around 0.45 to 0.50 per centage points above the London interbank offered rate (Libor). But now the offered price of several issues is putting the spread closer to one per centage point above Libor.

An example is the Natinsa



1982 paper, one of the few issues still being traded. The notes carry a 1/2 point spread above Libor, and are trading currently in the 97 1/2 to 97 3/4 range. At 97 1/2 the effective spread comes to nearly one per centage point.

When prices fall the trading liquidity may dry up. When the market expects a spread of around 1 per cent the prices are likely to stay low and the liquidity therefore nearly disappears.

A major FRN market-maker said on Friday: "There seems to be a complete lack of customer interest in Mexican paper." Several competitors agreed and said the short-term outlook was not expected to change.

In the fixed-rate Eurobond market the first day of April brought a surge in investor demand. After a sluggish start last week the Eurodollar sector rebounded on Thursday and Friday and closed the week 1/2 points to 3/4 points higher. The Euro D-Mark sector continues to be strong; prices were up 1/2 point on the week. The Swiss franc sector saw prices up 1/2 points on the week.

In the Eurodollar market, the expectation of a decline in U.S. money supply heightened the market and by Friday Euro-bankers reported a firm undertone.

Despite the flurry of activity late last week an increasing number of Euro-market participants are now shelving hopes of an early decline in dollar interest rates.

On the other side of the world the Japanese government bond market saw prices fall by around

CREDITS

Belgium tests the waters

THE KINGDOM of Belgium is borrowing \$100m through a five-year sterling syndicated credit managed by Hill Samuel and Baring Brothers. The margin above the London interbank offered rate (Libor) will be 1/2 per cent and the deal is fully underwritten and in syndication.

The other banks involved are Barclays Bank, Royal Bank of Canada, Dalwa, Saitama Bank, Banque Edige Limited, and Banque Bruxelles Lambert.

It is well known in the Euro-market that Belgium has been contemplating a jumbo credit and this comparatively small deal may be a way of testing the waters.

Elsewhere in Europe the action shifts tomorrow to Dresdner Bank's Frankfurt offices in Juergen-Ponto-Platz where more than 100 bankers and Polish officials will converge at 10 am to sign Poland's 1981 debt rescheduling agreement.

But as the bankers gather in Frankfurt, there are other matters in Eastern Europe which may soon merit their attention.

The Euro-market was awash with rumours on Friday of a large loan from the Western European central banks to Hungary. On Friday evening Mr János Fekete, first vice-president of the Hungarian National Bank, is said to have stated he

had "not heard these reports."

Romania's group of nine Western bank advisors, meanwhile, will be meeting in New York in a fortnight to discuss ways of organising that country's debt rescheduling.

In Lisbon, the much-awaited mandate for Portugal's \$300m eight-year credit was awarded to a group of ten banks. Citicorp is agent and Lloyds Bank International is running the books.

The other banks are the Bank of Tokyo, Fuji Bank, Industrial Bank of Japan, Banque de l'Indochine et de Suez, Commerzbank, Gulf International Bank, National Westminster Bank, and the Banco Portugueso do Atlantico. The Portuguese have also negotiated a \$25m acceptance credit for CNP, the state-owned petrochemical company. The two-year credit, bearing a 3/4 per cent acceptance commission, was placed by Lloyds Bank International.

Pemex's \$2bn jumbo was signed late last week, but the Mexican oil company also attempted a \$200m club deal through Banamex. This was withdrawn by Friday, only a few days after reports of its first emerged.

The \$200m two-year Euro-credit was viewed by some bankers as a curious "second bite of the cherry". It was in the pipeline before the ink was even dry on the \$2bn deal, and while Natinsa's \$1.2bn credit was still in the market.

Alan Friedman

ASIAN CURRENCY UNITS

Singapore undeterred by Hong Kong's relaxation

SINGAPORE'S offshore financial markets are shrugging off suggestions that business will suffer from Hong Kong's recent abolition of its 15 per cent withholding tax on interest payments. Official statistics over the next six months or so will show how much business may be leaving Singapore, as maturities fall due. Neither the foreign bankers nor the Singapore authorities are expecting this to be a flood, although the older banks point out that it was in large measure the Hong Kong withholding tax that prompted the development of foreign bank's Asian Currency Units (ACUs) from 1968 onwards.

It seems likely now that there will be some blurring of the traditional distinction between the two centres—where Hong Kong has tended to set up a loan syndications, Singapore has been used as a funding centre, a short-term money market, and a centre for the issue, mainly though not exclusively by Asian borrowers, of certificates of deposit, bonds and notes.

ACU's now number almost 200 in Singapore, with newcomers still arriving, and the collective investment this represents on the part of the international

banking community is probably great enough to ensure that business in Singapore will continue as before. Whether all are making money is a moot point. Only one (a well-known German bank active in the gold market) has recently reported a slight loss. Yet many banks are expected to find their money market business contracting this year, and those which have not found other ways of making money may have to decide whether to content themselves with a mere presence in the still rapidly growing South-East Asia region.

Forecasts for the current year are mixed. During January, the latest month for which the Monetary Authority of Singapore has published statistics, total assets and liabilities of the ACUs actually fell from an average of U.S.\$85.8bn to U.S.\$84.8bn. This is the first time the market has so much as paused for breath in five years of rapid expansion. Some bankers think a plateau has now been reached, and not everyone is sure that volume will hit the U.S.\$100bn mark in 1982.

As Singapore is quick to acknowledge, much of this business is merely "booked" to ACUs by their parent banks elsewhere, so that the market's fortunes are impossible to dis-

entangle from those of the Euro-market. Thus spreads on loans to many Asian borrowers have been uncomfortably narrow for many bankers recently, while for the future, risk is being far more carefully assessed and some countries will find themselves being asked to pay more.

Yet bankers are confident that the rapidly expanding economies of the region, notably Malaysia, Indonesia, Thailand, and the Philippines, will all continue to have a hearty appetite for funds. As a seasoned European banker put it, "the problem for us will be to pick the good projects."

The Asia bond market, meanwhile, remains closely bound to U.S. dollar interest rate movements elsewhere. Dealers say there is plenty of pent-up demand for funds on the part of the Asian borrowers who have been the heaviest users of the market—mainly because their greater recognition in Singapore means they can secure better terms than in Europe. The market has been less inclined to innovate than London, but a recent U.S.\$18m note issue with warrants attached by DBS-Diawa for Seiyu, the Japanese stores group, went quickly and is expected to set a trend for new borrowing instruments.

Adrian Dicks

CURRENT INTERNATIONAL BOND ISSUES

Table with columns: Borrowers, Amount m., Maturity, Av. life years, Coupon %, Price, Lead manager, Offer yield %. It lists various international bond issues in U.S. Dollars, Swiss Francs, Sterling, and Kuwaiti Dinars.

Advertisement for Wells Fargo International Financing Corporation N.V. featuring a logo of a horse-drawn carriage. Text includes: 'All of these Securities have been sold. This announcement appears as a matter of record only.', 'U.S. \$75,000,000', '15% Guaranteed Notes Due 1987', and a list of participating banks including Morgan Stanley International, Arab Banking Corporation, and others.

Advertisement for American Telephone and Telegraph Overseas Finance N.V. Text includes: 'U.S. \$400,000,000', '14% Guaranteed Debentures Due 1989', 'Unconditionally guaranteed as to payment of principal, premium, if any, and interest by American Telephone and Telegraph Company', and a list of participating banks including Algemeene Bank Nederland, Banque Nationale de Paris, and others.

Companies and Markets

UK COMPANY NEWS

Ulster TV ahead £66,000

THE subscription to the new Channel 4 and a substantially increased rental to the Independent Broadcasting Authority will cost Ulster Television something in the region of £100,000 in the second half of the current year ending July 31 1982, says Mr J. L. MacQuitty, the chairman.

Pre-tax television operating profits increased from £225,000 to £313,000, but Mr MacQuitty points out that while this improvement is encouraging, it is still below the corresponding figures of £245,000 and £343,000 for 1978 and 1979 respectively.

Turnover of UniChem, the UK's largest pharmaceutical wholesaler, increased by 29 per cent from £168.1m to £216.2m for 1981, while profits were up 18 per cent to £18m.

BIDS AND DEALS Thos. Locker acquisition

Thomas Locker (Holdings) has purchased a 50 per cent interest in Associated Perforators and Weavers from Butterfield Harvey for £558,000 cash.

Spencer Gears sells lossmaker

Spencer Gears (Holdings) has sold its loss making subsidiary Spencer Gears Ltd to Hi-Ton Int'l for £50,000 cash, payable by instalments.

UniChem's profits rise

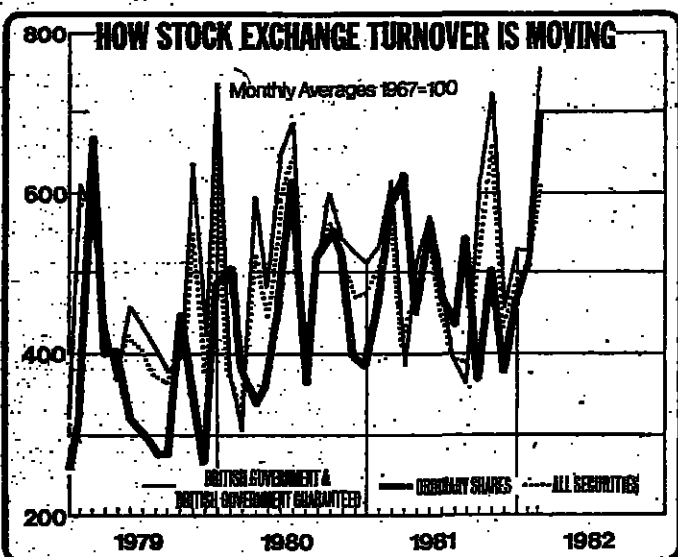
Turnover of UniChem, the UK's largest pharmaceutical wholesaler, increased by 29 per cent from £168.1m to £216.2m for 1981, while profits were up 18 per cent to £18m.

STOCK EXCHANGE BUSINESS IN MARCH

Stock Exchange turnover soars to record £22.7bn after Budget

BY NIGEL SPALL

STRONG HOPES of lower interest rates, realised in the wake of the Chancellor's Budget on March 9, encouraged heavy institutional and public buying of gilt-edged securities last month and pushed turnover in the sector to record highs.



Total business soared 37.5 per cent from February's £16.53bn to a peak of £22.7bn and the Financial Times Turnover Index for All Securities jumped from 506.6 to a record high of 696.4. The total number of bargains increased from February's 456,567 to 592,902.

Business in gilt-edged securities expanded dramatically, jumping by a remarkable 59.3bn, or nearly 43 per cent, to a record £17.89bn and surpassing the previous peak of £17.47bn recorded in January 1980. Business in longer-dated and irredeemables nearly doubled with a 94.3 per cent gain from £4.94bn to £9.65bn, while trade in shorter-dated stocks improved by 8.6 per cent—from £7.51bn to £8.16bn.

Financial Times Turnover index for ordinary shares rose from 506.7 in February to 608.5, its highest level since April of last year. The Financial Times Industrial Ordinary share index improved steadily and ended March 21.2 points up at the month's highest level of 588.5.

LONDON AND LIVERPOOL TRUST

London and Liverpool Trust has completed the acquisitions of LOS Office Supplies and T and T (Metal Products) 943,461 ordinary shares in London and Liverpool have been issued.

SECURITY CENTRES

Security Centres Holdings have acquired, for a cash consideration, the business and assets of Marker Alarms of Glasgow.

LINFOOD DISPOSAL

Linfood Holdings has completed the sale of John North to Manx and Overseas (Inv). Consideration satisfied wholly in cash.

NO PROBES

The acquisition by Norsk Hydro AS of the agricultural fertiliser division of Fisons, and the proposed merger between Enoxy Inc and International Synthetic Rubber are not being referred to the Monopolies Commission.

SHARE STAKES

Lendu Rubber Estates — Johore State Development Corporation holds 287,500 ordinary (12.78 per cent).

Braid Group — B. R. P. Securities acquires the 1,000,000 ordinary 'taking' holding to 720,000 (12 per cent).

Sturia Holdings — Family interests of R. A. W. Rudd increased by 26,666, bringing total to 66,666 shares.

BOARD MEETINGS

The following companies have notified dates of board meetings to the Stock Exchange. Such meetings are usually held for the purpose of considering dividends. Official indications are not available as to whether dividends are interims or finals and the subdivisions shown below are based mainly on last year's timetable.

TODAY Interims—Bryant, Glasco, Highland Distilleries. Finals—British Printing and Communication, Erith, Luis Gordon, Huntley and Palmer, S. Jerome, Macfarlane (Glasgow), Rugby Portland Cement, George Willis.

Table with columns: Company Name, Date. Includes Interims: J. B. Holdings (April 13), Benford Concrete Machinery (April 7), Burnish Oil (April 14), J. B. Holdings (April 14), Lilley (F. J. C.) (April 15), Rowson Inc. (April 14), Rock Darham (April 8), Spear and Jackson Intnl. (April 21), Steel Brothers (April 22).

IN BRIEF

CITY AND FOREIGN INVESTMENT—Results for 1981 reported February 15. Investments £3.6bn (£3.05m). Net current assets £26,306 (£27,725). Shareholders' funds £3,72m (£3.69m). Merger, 117 Old Broad Street, EC, April 22, noon.

NORTH BRITISH CANADIAN INVESTMENT—Final dividend for year to February 28 1982, 3.35p (3.05p) for a total of 5.1p (4.90p). Shareholders' funds £29.5m (£28.5m). Net asset value per share 121.51p (£120.9p). Gross revenue £603,485 (£585,121).

Table with columns: Year, High, Low, Price. Includes SPAIN: 1982 High 350, Low 280, Price 348. 1981 High 325, Low 250, Price 328. 1980 High 324, Low 202, Price 302. 1979 High 337, Low 214, Price 318. 1978 High 315, Low 119, Price 310. 1977 High 341, Low 241, Price 291. 1976 High 236, Low 202, Price 202. 1975 High 295, Low 202, Price 202. 1974 High 245, Low 218, Price 214. 1973 High 190, Low 127, Price 189. 1972 High 66, Low 60, Price 61. 1971 High 60, Low 52.4, Price 62.4. 1970 High 50, Low 35, Price 38. 1969 High 68.2, Low 61.7, Price 64. 1968 High 56.5, Low 50, Price 56.5. 1967 High 106.5, Low 51.9, Price 52.5. 1966 High 101, Low 94, Price 99. 1965 High 40, Low 9, Price 9. 1964 High 70, Low 25, Price 25. 1963 High 68, Low 62.5, Price 63.7.

NATOMAS \$50,000,000 Natomas Overseas Finance N.V. (Incorporated under the laws of the Netherlands Antilles) 15% Notes Due April 22, 1985 With Warrants to Purchase \$100,000,000 15 1/2% Debentures Due April 22, 1989 The Notes and Debentures will be Unconditionally Guaranteed by Natomas Company (Incorporated under the laws of California, U.S.A.)

Citicorp Overseas Finance Corporation N.V. (Incorporated with limited liability in the Netherlands Antilles) U.S. \$100,000,000 Guaranteed Retractable Notes Due 1992 Unconditionally Guaranteed as to Payment of Principal and Interest by CITICORP (Incorporated in Delaware) Offering Price 100% and accrued interest, if any, from April 15, 1982

Bank of India announce that on and after 5th April, 1982 the following rates will apply: Base Rate... 13 1/2% per Annum (Decreased from 14%) Deposit rate (basic) 10 1/2% per Annum (Decreased from 11 1/2%)

The Laird Group PUBLIC LIMITED COMPANY Results 1981 Turnover 272,200 Profit before Tax 16,846 Profit after Tax 12,882 Earnings per Ordinary Stock Unit 19.0p

CONTRACTS

George Wimpey secures £39.5m work

GEORGE WIMPEY AND CO has won orders totalling £39.5m for work in the UK.

At Bolton, the metropolitan borough has approved Wimpey Property Holdings as prospective developer for a retail scheme in the city centre on a site of 3.36 acres adjoining the market.

The £20m project will involve retention and refurbishment of the listed market building and provision of shopping facilities, including two stores, integrated at two trading levels with the market.

New retail space amounts to around 130,000 sq ft and as well as the stores some 30 additional retail units will be provided. Parking for over 500 cars is included as part of the scheme. Work is due to start in 1983 and the scheme should take around 2½ years to complete.

Shell Property Company has awarded a contract valued at over £12.5m to the Aberdeen office of Wimpey Construction UK for the construction of Phase V of Shell UK Exploration and Production office development at Tullos Hill, Aberdeen.

The project comprises the erection of a six-storey office block, a two-storey central services block and underground services ducting to link the central services block with the new and existing office blocks. Two link corridors will also be constructed between the new and existing office block. The office block comprises a six-storey development with two main wings and a central services core totalling 19,991 square metres. The central core houses lifts and toilet facilities together with a vertical plant room which services buildings at each floor level.

Construction is generally pre-cast concrete columns with insitu

concrete coffered upper floor slabs and beams. The stairs are both precast and insitu concrete construction external facade of the building is grc cladding panels with double glazed aluminium windows.

The central services block, 1,278 square metres, comprises a two-storey service block with capacity on the ground floor for all storage facilities and electrical services from the main switchboard standby generators and on the first floor a boiler plant room, water chilling plant room and office accommodation.

Work has started for completion in the spring of 1984. An office building of basement, ground floor and five upper floors is to be built for Wimpey Investments in Braemar Street, El by the London office of Wimpey Construction UK under a £7m contract.

Office accommodation and amenities in the building will have a gross area of 3,470 square metres. Work has started for completion at the end of July 1983.

CROSSLEY ENGINES, Manchester, part of NEL-APC, is to supply a 2MW Allen exhaust heat recovery steam turbine driven alternator set to the North of Scotland Hydro-Electric Board for Lerwick "B" power station in the Shetlands. The main engines for the power station, also being supplied by Crossley Engines under an earlier order from the board, are 12-cylinder Crossley-Pielstick type PC3 heavy-fuel-burning units, each of which will drive 8.3MW alternators. The value of the two contracts is just under £2m.

ORDERS FROM Nigeria with a total value in excess of £2m have been confirmed with the ALVAN

BLANCH DEVELOPMENT COMPANY. The equipment to be supplied forms part of the first half of the Nigerian Federal Government special rise programme, for rural communities to make them self-sufficient in the production of parboiled rice.

The whole chain of operation for processing the rice, including harvesting, threshing, cleaning, hulling, polishing, par-boiling and drying has been specially designed. The capacity of each plant has been calculated to deal with the produce from around 100 hectares allocated to each farmers' co-operative.

A £2m CONTRACT to supply coal and coke handling plant to National Smokeless Fuels has gone to BABCOCK MINERALS ENGINEERING, part of Babcock International. It covers design, manufacture and installation of equipment at Monkton Coking Works, Hiebburn, Tyne and Wear. Completion is due in February, 1983.

PYE TVT, the broadcast company of Philips, has won a contract worth £2m for four television outside broadcast vehicles to be used later this year to televise the 1982 Asian Games. Placed by Doordarshan, the Indian State broadcasting organisation, the order is believed to be the first large contract for colour television production equipment to be placed in India and has been won in partnership with the Electronics Trade and Industry Development Corporation (ETIDC), a Government of India enterprise.

THE CONTRACT to supply over 100 viewdata editing computers for ITEC Centres has been

awarded by the Department of Industry to TECHNICAL OFFICE COMPUTING. The contract is worth between half to three-quarters of a million pounds and may even be larger as more machines may be ordered in 1983.

THE PROCESS Industries division of Babcock-Bristol, a member of the Babcock Industrial and Electrical Products group, has won contracts worth around £220,000 for two Micro-B systems for the National Coal Board's Hucknall Colliery in Nottinghamshire and another two for the Renishaw Park Colliery in North Derbyshire.

The installation at Renishaw Park consists of two linked Micro-B systems with duplicated operator stations to provide information in the plant manager's office and the main control room. The installation at Hucknall will consist of two Micro-B systems: one for the separate filter press plant and one for the main washing plant.

THOMPSON FRICTION WELDING, Wolverhampton, has won two contracts to supply machines to Machinimport, the Russian foreign trade organisation, which has placed orders for a model 20 and a model 50 machine, with a total contract value over £250,000. They will be used for the production of cutting tools, joining high-speed steels to constructional steels.

Ministry of Defence contracts worth £70,000 have been won by POWELL DUFFRYN TOOLS, Cardiff, for hand torque tools and accessories, mainly for use by the RAF and Navy, both at home and overseas. These orders are in addition to repair contracts.

APPOINTMENTS

New men on Barclays board

Dr David Atterton, chairman of Fosco Minsep, and Sir James Spooner, a director of John Swire and Sons, have been appointed directors of BARCLAYS BANK.

GLOBE INVESTMENT TRUST has appointed to its court of directors Mr G. J. Elerston at present chairman of Globe Management.

Mr Andrew Longhurst has taken over as managing director of the CHELTENHAM AND GLOUCESTER BUILDING SOCIETY. He succeeds Mr Ralph Stow. There are two new assistant general managers, Mr Aubrey Spencer, who is in charge of the network of 128 branches, and Mr Terry Adams, responsible for development.

Mr Ernest Shenton, a director of DIXONS PHOTOGRAPHIC and chief executive of its photo processing division, is to devote more time to personal interests. He will be succeeded at Photo Trade Processing by Mr Eddie Dayan, marketing director of the group's retail division. Mr Shenton intends to resign his group directorship at the end of the current financial year and will then act as a consultant to the group.

Mr A. R. (Ronnie) Taylor has been appointed a director of LEGAL AND GENERAL GROUP. Mr Taylor was chairman of Willis Faber and a vice-president of the British Insurance Brokers Association.

Mr M. J. Babbington Smith has retired as chairman of the London committee of OTTOMAN BANK and has been succeeded by Mr Desmond A. Reid.

Mr Donald Lowe, senior partner of BALFOURS, consulting engineers, has retired. Mr Malcolm White, previously an associate, has joined the part-

nership and will be responsible for operations in Riyadh, Saudi Arabia.

COWARD CHANCE, solicitors, have taken Mr R. N. T. Short and Mr D. C. Stone into partnership from April 7.

GENERAL ACCIDENT FIRE AND LIFE ASSURANCE CORPORATION has appointed Mr C. R. Barker Bennett and Mr K. Noble, both assistant managers (UK) as deputy managers (UK).

Mr David W. Lees has joined the board of R. GREEN PROPERTIES as a non-executive director.

The RAVENSDOWN GROUP has appointed Mr J. P. D. White a director with responsibility for the RDM stainless steel and aluminium stockholding companies which operate in the north, and Mr A. W. Kinsley and Mr D. Hunt as non-executive directors.

Mr Charles A. Evers has been appointed to the newly-created post of product director, CROWN LIFE GROUP.

CITY OF WESTMINSTER ASSURANCE has appointed Mr Derek Rogers as agency manager and Mr Andrew Barnes as assistant agency manager.

The CREDIT INSURANCE ASSOCIATION, part of the Hogg Robinson Group, has appointed Mr C. J. S. Price, chairman; Mr R. E. Granger, deputy chairman; Mr H. C. Davies, managing director; Mr M. March and Mr N. Bowington, directors.

TERRA NOVA INSURANCE COMPANY has established a management advisory board with the following membership: Mr John Haddock—chairman (managing director); Mr Ralph F. Bailey—director (non-marine under-

writer); Mr Richard J. Edmunds—director (investment manager); and Mr Ian M. Morton—director (marine and aviation underwriter). The members of the management advisory board will continue to fulfil their existing executive responsibilities (in brackets).

The AUSTRALIAN MUTUAL PROVIDENT SOCIETY has appointed Mr D. O. Anderson as the Society's chairman-designate who retires as a director on July 1. He is chairman of the AMP Morgan Grenfell money market group.

Mr K. K. Weil has joined the board of HOGG ROBINSON (OVERSEAS) and has been succeeded as managing director of Hogg Robinson (Benefit Consultants) by Mr R. M. Westwood. Mr Weil will be continuing as deputy chairman of Hogg Robinson (Benefit Consultants).

SPUR SYSTEMS INTERNATIONAL has appointed Mr Frank Holloway marketing director.

THE BRITISH ELECTRIC TRACTION COMPANY has appointed Mr W. Boulton chairman of the group's three plant hire companies—Eddison Plant, Grayston and J. D. White—in succession to Mr G. F. Gray, who has retired. Mr Boulton is deputy chairman of all three plant hire companies and managing director of Grayston.

Mr Perry J. Bolton has joined MCCORQUODALE HOLDINGS INC. as vice president to assist in the business development programme. Mr K. Symonds has been appointed commercial director designate of Spottiswoode Ballantyne.

ALLIED STEEL AND WIRE has made the following appointments: Mr Philip Vann has been

appointed director and general manager of John Smith Wire. Mr Vann relinquishes his duties as operations director for BarFab Reinforcements on the appointment of Mr Roger Evans as operations manager. Mr Vann is replacing Mr Reg Jacobsen, who will be moving to Power Steels, to succeed Mr Harry Farley, director and general manager, who retires at the end of June.

GEORGE H. SCHOLES has made the following changes: Mr R. W. Nash, director and general manager, is responsible for day to day running operations of the company. Mr R. M. Hutchins has been appointed to the board as commercial director. Mr D. L. Adams, director, has become engineering director.

CARTWRIGHT GROUP has made the following appointments: Mr Stephen Clarkson has been appointed technical services director of Cartwright Construction and Mr Jim Barker has become construction director. Mr Brian J. Hagne has been appointed a director of Hudson and White. Mr Ron C. Thompson and Mr Peter Wilson have been appointed directors of A. V. Cook and Co., Leeds. Mr Robert Skardon has been appointed director of Bath-based Hayward and Wooster.

BARKER AND DOBSON GROUP has appointed Mr G. Hartley to the board.

Mr Ernest J. Warner and Mr David G. W. Turner are to join the partnership of SPENCER THORNTON AND CO, stockbrokers, on April 17 1982.

Mr Terence Clifford-Hooper has joined the board of MARY QUANT as marketing director. He has resigned as managing director of Knightsbridge Jourdan, a subsidiary of Thomas Jourdan.



A Miracle of nature, of Art of Traditions for Your Holidays

WHO'S WHO IN MIDDLE EAST BANKING & FINANCE

Exceptional pre-publication price for the 3 complete volumes.

US\$200 Valid until 24 April 1982

ORDER NOW

Order Form
To: APS (Press and Enterprises) Ltd., 18 Naxos Street, P.O. Box 3901 Nicosia, Cyprus TX 3712 APS CY

From: Name _____ Title _____
Company _____
Address _____
City _____ Country _____

Please reserve for me _____ copies of the APS Who's Who in Middle East Banking and Finance at \$220, inc. air mail. These orders are _____
Payment enclosed _____ Signature _____

This week's business in both Houses of Parliament

TODAY
Commons: Local Government Finance (No. 2) Bill (remaining stages); Reserve Forces Bill (remaining stages).
Lords: Local Government (Miscellaneous Provisions) Bill, Committee. Antiquities Bill, Third Reading. Transport (London) (Amendment) Bill, Second Reading. Debate on motion calling on the Government to revoke the British Nationality (Amendment) Regulations. Debate on report of the Calcutta Gulbenkian Foundation enclaved "The Arts in Schools".

SELECT COMMITTEES: Home Affairs: Sub-Committee on Race Relations and Immigration. Subject: Immigration from the Indian sub-continent. Witness: "Rt. Hon. Timothy Raison, Minister of State for Home Affairs (Room 15, 11.00 am).
Treasury and Civil Service. Subject: Budgetary Reform in the United Kingdom. Witness: Rt. Hon. Sir Geoffrey Howe,

Chancellor of the Exchequer (Room 15, 4.30 pm).
Public Accounts: Subject: Matters relating to Northern Ireland. Witnesses: Northern Ireland Department of Environment (Room 16, 4.45 pm).

TOMORROW
Commons: Finance Bill, Second Reading.
Lords: Coal Industry Bill, Third Reading. Social Security and Housing Benefits Bill, Second Reading. Industrial Relations (Northern Ireland) Order 1982. Administration of Justice Bill, committee. Debate on a British component in the A320 Airbus as part of the policy of encouraging European collaboration in growth areas of advanced technology.
Select Committee: Foreign Affairs: Overseas Development sub-committee—Subject: Overseas Development Administration Supply Estimates 1982-83. Witnesses: Overseas Develop-

ment Administration (Room 18, 5.30 pm).

WEDNESDAY
Commons: Debate on the 1st to 17th Reports from the Public Accounts Committee in session 1980-81 and the 1st to 5th Reports in session 1981-82, and relevant Government observations. At 7 pm, opposed private business concerning the British Transport Docks Board.
Lords: Inter-governmental Maritime Consultative Organisation (Immunities and Privileges) Order 1982. Legal Aid Bill, Report. European Communities (Definition of Treaties) International Railway Tariffs Agreement) Order, 1982. British Railways Board (Amendment) Order 1982. Deer (Amendment) (Scotland) Bill, Third Reading. Debates on Poland and the Helsinki Declaration.
Select Committee: Education, Science and Arts. Subject: Public and Private Funding of the Arts. Witnesses: Rt. Hon. Paul Channon, Minister for the Arts; the Hon. Nicholas Ridley, Financial Secretary to the Treasury (Room 6, 10.00 am).
Defence—Subject: Ministry of Defence Organisation and Procurement. Witnesses: The Viscount Trenchard MC, Minister of State for Defence Procurement; Geoffrey Pattle MP, Under-Secretary of State for Defence Procurement (Room 15, 10.45 am).
Transport—Subject: Transport aspects of the 1982 Public Expenditure White Paper. Witnesses: Sir Peter Baldwin, KCB, Permanent Secretary and departmental officials. Employment—Subject: The Commission for Racial Equality's draft Code of Practice. Witnesses: The Advisory Conciliation and Arbitration Service (Room 8, 4.30 pm).

THURSDAY
Commons: House will meet at 9.30 am, take questions until 10.30 am and adjourn at 3.30 pm until Monday April 19.

EUROFIMA
(EUROPEAN COMPANY FOR THE FINANCING OF RAILWAY ROLLING STOCK)

Kuwaiti Dinars 6000000
11 per cent. Bonds due 1989

Kuwait Foreign Trading Contracting & Investment Co. (S.A.K.) **Blyth Eastman Paine Webber International Limited**

Alahli Bank of Kuwait K.S.C.
The Gulf Bank K.S.C.
The Industrial Bank of Kuwait, K.S.C.
Kuwait International Investment Co. s.a.k.
Kuwait Investment Company (S.A.K.)
The National Bank of Kuwait S.A.K.

The Arab Company for Trading Securities (ACTS) S.A.K.
Gulf Financial Centre
Kuwait Financial Centre S.A.K.
Kuwait International Finance Co. S.A.K. (KIFCO)

CHARBONNAGES de FRANCE

Kuwaiti Dinars 7000,000
11 3/4 per cent. Guaranteed Bonds due 1989

Unconditionally guaranteed by
The Republic of France
Issue price 100 per cent

Kuwait Foreign Trading Contracting & Investment Co. (S.A.K.) - Crédit Lyonnais

Alahli Bank of Kuwait K.S.C. Kuwait
Al-Mal Group
Arab Trust Company K.S.C.
The Industrial Bank of Kuwait, K.S.C.
Kuwait International Investment Co. s.a.k.
Kuwait Investment Company (S.A.K.)
The National Bank of Kuwait S.A.K.

The Arab Company for Trading Securities (ACTS) S.A.K.
Kuwait International Finance Co. S.A.K. (KIFCO)
Kuwait Real Estate Bank (K.S.C.)

WORLD STOCK MARKETS

NEW YORK

Table of stock prices for New York market, including columns for High, Low, Stock, and April 5 price.

1981-2

Table of stock prices for 1981-2 period, including columns for High, Low, Stock, and April 2 price.

1982

Table of stock prices for 1982 period, including columns for High, Low, Stock, and April 2 price.

CANADA

Table of stock prices for Canada market, including columns for High, Low, Stock, and April 2 price.

HOLLAND

Table of stock prices for Holland market, including columns for High, Low, Stock, and April 2 price.

HONG KONG

Table of stock prices for Hong Kong market, including columns for High, Low, Stock, and April 2 price.

INDICES

Table of various stock indices including Dow Jones, Standard and Poors, and NY & All Common.

NEW YORK

Table of New York market indices and prices for various sectors.

AUSTRIA

Table of stock prices for Austria market.

GERMANY

Table of stock prices for Germany market.

FRANCE

Table of stock prices for France market.

SWEDEN

Table of stock prices for Sweden market.

FINLAND

Table of stock prices for Finland market.

NETHERLANDS

Table of stock prices for Netherlands market.

Notes and footnotes at the bottom of the page, including exchange rates and market commentary.

CURRENCIES, MONEY and GOLD

MONEY MARKETS

London rates ease

SHORT TERM interest rates declined in London last week, with seven-day interbank money finishing at 12 1/2 per cent, compared with 13 1/2 per cent on the previous Friday.

Conditions are expected to improve this week, although the total shortage of day-to-day credit is likely to exceed £1.5bn.

In New York federal funds rose above 17 per cent on make-up day Wednesday, and stayed firm at about 16 1/2 per cent before lunch on Friday.

In Frankfurt key lending rates were unchanged at the Bundesbank council meeting, in line with expectations.

Day-to-day credit was in short supply generally, but the authorities had difficulty forecasting the size of the deficit most days.

ahead of payment on a state loan. The low level recorded earlier in the week reflected intervention by the Dutch authorities to support the weaker members of the European Monetary System.

In Amsterdam call money was volatile, falling 1 1/2 per cent on Tuesday, but rising to about 7 per cent the following day.

ahead of payment on a state loan. The low level recorded earlier in the week reflected intervention by the Dutch authorities to support the weaker members of the European Monetary System.

WEEKLY CHANGE IN WORLD INTEREST RATES

Table showing weekly change in world interest rates for London, New York, Tokyo, and Amsterdam, including rates for various terms like 1 month, 3 months, and 6 months.

London—band 1 bills mature in up to 14 days, band 2 bills 15 to 28 days, and band 3 bills 34 to 83 days.

BANK OF ENGLAND TREASURY BILL TENDER

Table showing Bank of England Treasury Bill tender results for April 2 and April 3, including applications, total allocated, and allotment at minimum level.

FT LONDON INTERBANK FIXING

Table showing interbank fixing rates for 3 months U.S. dollars, 6 months U.S. dollars, and 12 months U.S. dollars.

LONDON MONEY RATES

Table showing London money rates for various terms like overnight, 7 days, 1 month, 3 months, 6 months, and 12 months.

EURO-CURRENCY INTEREST RATES

Table showing Euro-currency interest rates for various currencies including U.S. Dollar, Canadian Dollar, Dutch Guilder, Swiss Franc, West German Mark, French Franc, Italian Lira, and Japanese Yen.

Local authorities and finance houses seven days' notice, others seven days fixed. Long-term local authority mortgage rates normally three years 13 1/2 per cent, four years 14 per cent, five years 14 1/2 per cent.

Approximate selling rates for one month Treasury bills 12 1/2-12 3/4 per cent; two months 12 1/2-12 3/4 per cent; three months 12 1/2-12 3/4 per cent.

Finance Houses Base Rates (published by the Finance Houses Association) 14 per cent from April 1 1982. Clearing Bank Deposit Rates for sums at seven days' notice 10 1/2 per cent.

CURRENCIES AND GOLD

Dollar steady

The dollar recorded little change on balance last week, despite a rise in Euro-dollar interest rates. A rise in the U.S. money supply figures led to a firmer trend in interest rates at the beginning of the week, but from then on there was little movement.

THE DOLLAR SPOT AND FORWARD

Table showing dollar spot and forward rates for various currencies including UK, Canada, Netherlands, Belgium, Denmark, West Germany, Italy, Norway, Sweden, Japan, Austria, and Switzerland.

THE POUND SPOT AND FORWARD

Table showing pound spot and forward rates for various currencies including U.S., Canada, Netherlands, Belgium, Denmark, West Germany, Italy, Norway, Sweden, Japan, Austria, and Switzerland.

GOLD

Table showing gold prices for various currencies including U.S., U.K., West Germany, France, Switzerland, and Japan.

EMU EUROPEAN CURRENCY UNIT RATES

Table showing EMU European Currency Unit rates for various currencies including Belgium, Denmark, France, Germany, Greece, Italy, Netherlands, Portugal, Spain, and United Kingdom.

FORWARD RATES: AGAINST STERLING

Table showing forward rates against sterling for various currencies including Dollar, D-Mark, French Franc, Swiss Franc, and Japanese Yen.

OTHER CURRENCIES

Table showing other currency rates for various countries including Argentina, Australia, Brazil, Canada, Denmark, Hong Kong, Iran, Kuwait, Luxembourg, Malaysia, New Zealand, Saudi Arabia, Singapore, South Africa, and U.A.E.

CURRENCY MOVEMENTS

Table showing currency movements for various currencies including Sterling, U.S. dollar, Canadian dollar, Australian dollar, Swiss franc, West German mark, Japanese yen, and U.K. pound.

CURRENCY RATES

Table showing currency rates for various currencies including Sterling, U.S. dollar, Canadian dollar, Australian dollar, Swiss franc, West German mark, Japanese yen, and U.K. pound.

EXCHANGE CROSS RATES

Table showing exchange cross rates for various currencies including Pound Sterling, U.S. Dollar, Deutsch-Mark, Japanese Yen, French Franc, Swiss Franc, Dutch Guilder, Italian Lira, Canadian Dollar, and Belgian Franc.

FT UNIT TRUST INFORMATION SERVICE

Table showing FT Unit Trust Information Service details for various unit trusts including Abbey Unit Tr. Mgrs., American Growth, and others.

AUTHORISED TRUSTS

Table showing authorised trusts for various categories including Abbey Unit Tr. Mgrs., American Growth, and others.

Large advertisement for FT Unit Trust Information Service, featuring a grid of numerous unit trust listings with details on managers, assets, and performance.

Vertical text on the left margin, possibly a page number or index.

INSURANCE BONDS

Table of insurance bonds with columns for company name, policy type, and price.

FT UNIT TRUST INFORMATION SERVICE

Table of FT Unit Trust Information Service listing various unit trusts and their details.

Table of unit trusts listing various investment options and their performance metrics.

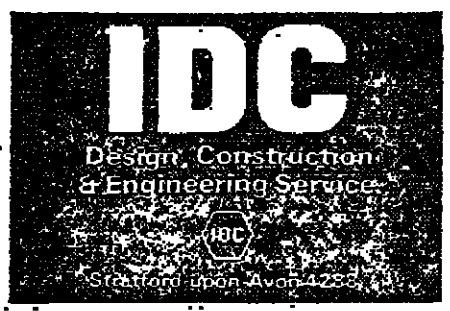
Table of unit trusts listing various investment options and their performance metrics.

OFFSHORE & OVERSEAS FUNDS

Table of offshore and overseas funds listing various international investment options.

Table of offshore and overseas funds listing various international investment options.

NOTES section providing additional information and disclaimers regarding the fund data.



FT SHARE INFORMATION SERVICE

FOOD, GROCERIES—Cont.

BRITISH FUNDS

Shorts (Lives up to Five Years)

Stock	Price	Yield
1000	100.00	10.00%
1001	100.00	10.00%
1002	100.00	10.00%
1003	100.00	10.00%
1004	100.00	10.00%
1005	100.00	10.00%
1006	100.00	10.00%
1007	100.00	10.00%
1008	100.00	10.00%
1009	100.00	10.00%
1010	100.00	10.00%
1011	100.00	10.00%
1012	100.00	10.00%
1013	100.00	10.00%
1014	100.00	10.00%
1015	100.00	10.00%
1016	100.00	10.00%
1017	100.00	10.00%
1018	100.00	10.00%
1019	100.00	10.00%
1020	100.00	10.00%

Five to Fifteen Years

Stock	Price	Yield
1021	100.00	10.00%
1022	100.00	10.00%
1023	100.00	10.00%
1024	100.00	10.00%
1025	100.00	10.00%
1026	100.00	10.00%
1027	100.00	10.00%
1028	100.00	10.00%
1029	100.00	10.00%
1030	100.00	10.00%
1031	100.00	10.00%
1032	100.00	10.00%
1033	100.00	10.00%
1034	100.00	10.00%
1035	100.00	10.00%
1036	100.00	10.00%
1037	100.00	10.00%
1038	100.00	10.00%
1039	100.00	10.00%
1040	100.00	10.00%

Over Fifteen Years

Stock	Price	Yield
1041	100.00	10.00%
1042	100.00	10.00%
1043	100.00	10.00%
1044	100.00	10.00%
1045	100.00	10.00%
1046	100.00	10.00%
1047	100.00	10.00%
1048	100.00	10.00%
1049	100.00	10.00%
1050	100.00	10.00%
1051	100.00	10.00%
1052	100.00	10.00%
1053	100.00	10.00%
1054	100.00	10.00%
1055	100.00	10.00%
1056	100.00	10.00%
1057	100.00	10.00%
1058	100.00	10.00%
1059	100.00	10.00%
1060	100.00	10.00%

Undated

Stock	Price	Yield
1061	100.00	10.00%
1062	100.00	10.00%
1063	100.00	10.00%
1064	100.00	10.00%
1065	100.00	10.00%
1066	100.00	10.00%
1067	100.00	10.00%
1068	100.00	10.00%
1069	100.00	10.00%
1070	100.00	10.00%
1071	100.00	10.00%
1072	100.00	10.00%
1073	100.00	10.00%
1074	100.00	10.00%
1075	100.00	10.00%
1076	100.00	10.00%
1077	100.00	10.00%
1078	100.00	10.00%
1079	100.00	10.00%
1080	100.00	10.00%

Index-Linked & Variable Rate

Stock	Price	Yield
1081	100.00	10.00%
1082	100.00	10.00%
1083	100.00	10.00%
1084	100.00	10.00%
1085	100.00	10.00%
1086	100.00	10.00%
1087	100.00	10.00%
1088	100.00	10.00%
1089	100.00	10.00%
1090	100.00	10.00%
1091	100.00	10.00%
1092	100.00	10.00%
1093	100.00	10.00%
1094	100.00	10.00%
1095	100.00	10.00%
1096	100.00	10.00%
1097	100.00	10.00%
1098	100.00	10.00%
1099	100.00	10.00%
1100	100.00	10.00%

INT. BANK AND O'SEAS GOVT. STERLING ISSUES

Stock	Price	Yield
1101	100.00	10.00%
1102	100.00	10.00%
1103	100.00	10.00%
1104	100.00	10.00%
1105	100.00	10.00%
1106	100.00	10.00%
1107	100.00	10.00%
1108	100.00	10.00%
1109	100.00	10.00%
1110	100.00	10.00%
1111	100.00	10.00%
1112	100.00	10.00%
1113	100.00	10.00%
1114	100.00	10.00%
1115	100.00	10.00%
1116	100.00	10.00%
1117	100.00	10.00%
1118	100.00	10.00%
1119	100.00	10.00%
1120	100.00	10.00%

CORPORATION LOANS

Stock	Price	Yield
1121	100.00	10.00%
1122	100.00	10.00%
1123	100.00	10.00%
1124	100.00	10.00%
1125	100.00	10.00%
1126	100.00	10.00%
1127	100.00	10.00%
1128	100.00	10.00%
1129	100.00	10.00%
1130	100.00	10.00%
1131	100.00	10.00%
1132	100.00	10.00%
1133	100.00	10.00%
1134	100.00	10.00%
1135	100.00	10.00%
1136	100.00	10.00%
1137	100.00	10.00%
1138	100.00	10.00%
1139	100.00	10.00%
1140	100.00	10.00%

LOANS Public Board and Ind.

Stock	Price	Yield
1141	100.00	10.00%
1142	100.00	10.00%
1143	100.00	10.00%
1144	100.00	10.00%
1145	100.00	10.00%
1146	100.00	10.00%
1147	100.00	10.00%
1148	100.00	10.00%
1149	100.00	10.00%
1150	100.00	10.00%
1151	100.00	10.00%
1152	100.00	10.00%
1153	100.00	10.00%
1154	100.00	10.00%
1155	100.00	10.00%
1156	100.00	10.00%
1157	100.00	10.00%
1158	100.00	10.00%
1159	100.00	10.00%
1160	100.00	10.00%

COMMONWEALTH AND AFRICAN LOANS

Stock	Price	Yield
1161	100.00	10.00%
1162	100.00	10.00%
1163	100.00	10.00%
1164	100.00	10.00%
1165	100.00	10.00%
1166	100.00	10.00%
1167	100.00	10.00%
1168	100.00	10.00%
1169	100.00	10.00%
1170	100.00	10.00%
1171	100.00	10.00%
1172	100.00	10.00%
1173	100.00	10.00%
1174	100.00	10.00%
1175	100.00	10.00%
1176	100.00	10.00%
1177	100.00	10.00%
1178	100.00	10.00%
1179	100.00	10.00%
1180	100.00	10.00%

LOANS Public Board and Ind.

Stock	Price	Yield
1181	100.00	10.00%
1182	100.00	10.00%
1183	100.00	10.00%
1184	100.00	10.00%
1185	100.00	10.00%
1186	100.00	10.00%
1187	100.00	10.00%
1188	100.00	10.00%
1189	100.00	10.00%
1190	100.00	10.00%
1191	100.00	10.00%
1192	100.00	10.00%
1193	100.00	10.00%
1194	100.00	10.00%
1195	100.00	10.00%
1196	100.00	10.00%
1197	100.00	10.00%
1198	100.00	10.00%
1199	100.00	10.00%
1200	100.00	10.00%

COMMONWEALTH AND AFRICAN LOANS

Stock	Price	Yield
1201	100.00	10.00%
1202	100.00	10.00%
1203	100.00	10.00%
1204	100.00	10.00%
1205	100.00	10.00%
1206	100.00	10.00%
1207	100.00	10.00%
1208	100.00	10.00%
1209	100.00	10.00%
1210	100.00	10.00%
1211	100.00	10.00%
1212	100.00	10.00%
1213	100.00	10.00%
1214	100.00	10.00%
1215	100.00	10.00%
1216	100.00	10.00%
1217	100.00	10.00%
1218	100.00	10.00%
1219	100.00	10.00%
1220	100.00	10.00%

LOANS Public Board and Ind.

Stock	Price	Yield
1221	100.00	10.00%
1222	100.00	10.00%
1223	100.00	10.00%
1224	100.00	10.00%
1225	100.00	10.00%
1226	100.00	10.00%
1227	100.00	10.00%
1228	100.00	10.00%
1229	100.00	10.00%
1230	100.00	10.00%
1231	100.00	10.00%
1232	100.00	10.00%
1233	100.00	10.00%
1234	100.00	10.00%
1235	100.00	10.00%
1236	100.00	10.00%
1237	100.00	10.00%
1238	100.00	10.00%
1239	100.00	10.00%
1240	100.00	10.00%

COMMONWEALTH AND AFRICAN LOANS

Stock	Price	Yield
1241	100.00	10.00%
1242	100.00	10.00%
1243	100.00	10.00%
1244	100.00	10.00%
1245	100.00	10.00%
1246	100.00	10.00%
1247	100.00	10.00%
1248	100.00	10.00%
1249	100.00	10.00%
1250	100.00	10.00%
1251	100.00	10.00%
1252	100.00	10.00%
1253	100.00	10.00%
1254	100.00	10.00%
1255	100.00	10.00%
1256	100.00	10.00%
1257	100.00	10.00%
1258	100.00	10.00%
1259	100.00	10.00%
1260	100.00	10.00%

LOANS—Continued

Stock	Price	Yield
1261	100.00	10.00%
1262	100.00	10.00%
1263	100.00	10.00%
1264	100.00	10.00%
1265	100.00	10.00%
1266	100.00	10.00%
1267	100.00	10.00%
1268	100.00	10.00%
1269	100.00	10.00%
1270	100.00	10.00%
1271	100.00	10.00%
1272	100.00	10.00%
1273	100.00	10.00%
1274	100.00	10.00%
1275	100.00	10.00%
1276	100.00	10.00%
1277	100.00	10.00%
1278	100.00	10.00%
1279	100.00	10.00%
1280	100.00	10.00%

FOREIGN BONDS & RAILS

Stock	Price	Yield
1281	100.00	10.00%
1282	100.00	10.00%
1283	100.00	10.00%
1284	100.00	10.00%
1285	100.00	10.00%
1286	100.00	10.00%
1287	100.00	10.00%
1288	100.00	10.00%
1289	100.00	10.00%
1290	100.00	10.00%
1291	100.00	10.00%
1292	100.	

INDUSTRIALS—Continued

Table of industrial stocks including companies like Anglo American, Anglo Coal, Anglo Oil, Anglo Petroleum, Anglo Steel, Anglo Textiles, Anglo Chemicals, Anglo Electronics, Anglo Services, Anglo Finance, Anglo Land, Anglo Property, Anglo Insurance, Anglo Leisure, Anglo Motors, Anglo Aircraft, Anglo Garages, Anglo Distributors, Anglo Newspapers, Anglo Publishers, Anglo Paper, Anglo Printing, Anglo Advertising, Anglo Property, Anglo Insurance, Anglo Leisure.

LEISURE—Continued

Table of leisure stocks including companies like Anglo Leisure, Anglo Motors, Anglo Aircraft, Anglo Garages, Anglo Distributors, Anglo Newspapers, Anglo Publishers, Anglo Paper, Anglo Printing, Anglo Advertising, Anglo Property, Anglo Insurance, Anglo Leisure.

PROPERTY—Continued

Table of property stocks including companies like Anglo Property, Anglo Land, Anglo Finance, Anglo Investment, Anglo Trusts, Anglo Finance, Anglo Land, Anglo Property, Anglo Investment, Anglo Trusts, Anglo Finance, Anglo Land, Anglo Property, Anglo Investment, Anglo Trusts.

INVESTMENT TRUSTS—Cont.

Table of investment trusts including Anglo Investment, Anglo Trusts, Anglo Finance, Anglo Land, Anglo Property, Anglo Investment, Anglo Trusts, Anglo Finance, Anglo Land, Anglo Property, Anglo Investment, Anglo Trusts.

OIL AND GAS—Continued

Table of oil and gas stocks including Anglo Oil, Anglo Petroleum, Anglo Gas, Anglo Energy, Anglo Power, Anglo Utilities, Anglo Services, Anglo Finance, Anglo Land, Anglo Property, Anglo Insurance, Anglo Leisure.

MINES—Continued

Table of mines stocks including Anglo Mines, Anglo Metals, Anglo Minerals, Anglo Resources, Anglo Services, Anglo Finance, Anglo Land, Anglo Property, Anglo Insurance, Anglo Leisure.

OVERSEAS TRADERS

Table of overseas traders including Anglo Overseas, Anglo International, Anglo Global, Anglo World, Anglo Services, Anglo Finance, Anglo Land, Anglo Property, Anglo Insurance, Anglo Leisure.

INSURANCE

Table of insurance stocks including Anglo Insurance, Anglo Services, Anglo Finance, Anglo Land, Anglo Property, Anglo Insurance, Anglo Services, Anglo Finance, Anglo Land, Anglo Property.

LEISURE

Table of leisure stocks including Anglo Leisure, Anglo Motors, Anglo Aircraft, Anglo Garages, Anglo Distributors, Anglo Newspapers, Anglo Publishers, Anglo Paper, Anglo Printing, Anglo Advertising, Anglo Property, Anglo Insurance, Anglo Leisure.

PROPERTY

Table of property stocks including Anglo Property, Anglo Land, Anglo Finance, Anglo Investment, Anglo Trusts, Anglo Finance, Anglo Land, Anglo Property, Anglo Investment, Anglo Trusts.

INSURANCE

Table of insurance stocks including Anglo Insurance, Anglo Services, Anglo Finance, Anglo Land, Anglo Property, Anglo Insurance, Anglo Services, Anglo Finance, Anglo Land, Anglo Property.

PROPERTY

Table of property stocks including Anglo Property, Anglo Land, Anglo Finance, Anglo Investment, Anglo Trusts, Anglo Finance, Anglo Land, Anglo Property, Anglo Investment, Anglo Trusts.

INSURANCE

Table of insurance stocks including Anglo Insurance, Anglo Services, Anglo Finance, Anglo Land, Anglo Property, Anglo Insurance, Anglo Services, Anglo Finance, Anglo Land, Anglo Property.

OIL AND GAS

Table of oil and gas stocks including Anglo Oil, Anglo Petroleum, Anglo Gas, Anglo Energy, Anglo Power, Anglo Utilities, Anglo Services, Anglo Finance, Anglo Land, Anglo Property, Anglo Insurance, Anglo Leisure.

DIAMOND AND PLATINUM

Table of diamond and platinum stocks including Anglo Diamonds, Anglo Platinum, Anglo Services, Anglo Finance, Anglo Land, Anglo Property, Anglo Insurance, Anglo Leisure.

OIL AND GAS

Table of oil and gas stocks including Anglo Oil, Anglo Petroleum, Anglo Gas, Anglo Energy, Anglo Power, Anglo Utilities, Anglo Services, Anglo Finance, Anglo Land, Anglo Property, Anglo Insurance, Anglo Leisure.

DIAMOND AND PLATINUM

Table of diamond and platinum stocks including Anglo Diamonds, Anglo Platinum, Anglo Services, Anglo Finance, Anglo Land, Anglo Property, Anglo Insurance, Anglo Leisure.

REGIONAL MARKETS

Table of regional markets including Anglo Regional, Anglo Services, Anglo Finance, Anglo Land, Anglo Property, Anglo Regional, Anglo Services, Anglo Finance, Anglo Land, Anglo Property.

OPTIONS

Table of options including Anglo Options, Anglo Services, Anglo Finance, Anglo Land, Anglo Property, Anglo Options, Anglo Services, Anglo Finance, Anglo Land, Anglo Property.

REGIONAL MARKETS

Table of regional markets including Anglo Regional, Anglo Services, Anglo Finance, Anglo Land, Anglo Property, Anglo Regional, Anglo Services, Anglo Finance, Anglo Land, Anglo Property.

OPTIONS

Table of options including Anglo Options, Anglo Services, Anglo Finance, Anglo Land, Anglo Property, Anglo Options, Anglo Services, Anglo Finance, Anglo Land, Anglo Property.

NIKKO THE NIKKO SECURITIES CO. LTD. The Nikko Securities Co., (Europe) Ltd. Nikko House, 17 Goddard Street, London, EC4 England. Tel: 248-9811 Telex: 884717

MINES—Continued Central African. Table listing Central African mines with columns for Stock, Price, and other details.

MINES—Continued Australian. Table listing Australian mines with columns for Stock, Price, and other details.

MINES—Continued Tins. Table listing tin mines with columns for Stock, Price, and other details.

MINES—Continued Copper. Table listing copper mines with columns for Stock, Price, and other details.

MINES—Continued Miscellaneous. Table listing miscellaneous mines with columns for Stock, Price, and other details.

NOTES. Text providing information and notes regarding the mining section.

TEAS. Table listing tea stocks with columns for Stock, Price, and other details.

MINES. Table listing various mines with columns for Stock, Price, and other details.

REGIONAL MARKETS. Table listing regional market data with columns for Stock, Price, and other details.



Tyre rivals close to pact on standard sizes

BY STUART MARSHALL, MOTORING CORRESPONDENT

PACT ON STANDARD SIZES
DUNLOP and Michelin will announce soon that they have agreed proposals for a new international standard for millimetric diameter car tyres and wheel sizes. The proposals will be put before the European Tyre and Rim Technical Organisation (ETRTO) with a request that they be officially published as soon as possible.

sales to the motor industry and gain royalty income from production licenses for other tyre and wheel manufacturers. Dunlop and Michelin have both faced problems with their tyres. Dunlop's Denovo "run-flat" safety tyre has met with little success since it was introduced in the mid-1970s. British Leyland, the only manufacturer to show any enthusiasm for it, has dropped Denovo as factory-fitted optional equipment on all its cars through lack of demand. Denovo could only go on a special size of rim that no other tyre would fit.

While the technological merit of Michelin's high-performance TRX tyre has been widely recognised, it has suffered commercially for a similar reason. It, too, needed a special size of wheel with a unique rim shape. In the seven years since it was introduced, French car makers have been Michelin's main customers for TRX though Ford has fitted it to some up-market models.

Both Dunlop and Michelin have been independently developing their own high-performance tyres which stay in place on the wheel after blowouts and allow the driver to carry on for a few miles.

Chandler to retain Neddy position

By John Elliott, Industrial Editor

MR GEOFFREY CHANDLER is to be re-appointed director general of the National Economic Development Office for about one year.

His first four-year term, in the £30,000-£35,000 a year job, expires in June. He is thought to have agreed with Sir Geoffrey Howe, the Chancellor, that he should be re-appointed for about a year to give both him and the Government time to consider longer-term arrangements.

An announcement is likely soon, possibly at the monthly meeting of the National Economic Development Council on Wednesday.

Mr Chandler, 59, joined the Nedo in 1978 after a long career in Shell, before which he had been a journalist on the Financial Times.

Strategy
At times he has been a controversial director - general, making a series of speeches which have criticised the Government for not trying harder to achieve consensus for its policies.

He has also called for a more positive industrial strategy and for some form of incomes policy and at times has annoyed leaders of the CBI and TUC, as well as senior ministers and civil servants, with his carefully judged outspokenness.

But it would have been difficult for the Government to refuse to renew his contract without running the risk of the sort of row which has blown up around the Manpower Services Commission, following the announcement in March that Sir Richard O'Brien, its chairman, was to be replaced.

In any case, Mr Chandler is thought to have run the Nedo well, providing good policy papers and other support services both for the council and for its 50 little Neddies and sector working parties.

He is thought not to have been keen to take on a second full four-year term. A two-year appointment would have been a suitable compromise but is regarded by all those concerned as being potentially inconvenient because it could mean hunting for a replacement around the time of the next General Election if the government stays in power for approaching its full term of office.

So a re-appointment period of about a year emerged as the most likely solution and was being finalised just before the weekend.

THE LEX COLUMN When companies can buy in

Public companies can start to think seriously now about the circumstances in which they might buy in their own shares. The Chancellor's Budget speech made clear that some of the tax obstacles preventing private, but not listed, companies from doing so would be removed.

However, one of the more obscure clauses of the Finance Bill now appears to suggest that a route has been opened up for listed companies wanting to do the same thing, albeit at a cost. There is not going to be any revolution in corporate financial management, but at least it seems that the range of options open to companies is to be widened slightly.

The 1981 Companies Act makes it legal for the first time, broadly speaking, for UK companies to buy in their own shares. The relevant laws are expected to be enacted in the next few weeks. The theoretical attraction of buying-in shares for a public company is that it allows surplus cash to be released to shareholders— who can reinvest it in companies which actually need the capital. This kind of financial theory is not likely to cut much ice in many cash-rich company boards: they may be more impressed, however, by the prospect of reducing the discount to asset value at which their companies' shares may be trading, a change which such a manoeuvre might achieve.

So public companies will be indifferent in tax terms as to whether they buy in shares or pay out extra dividends. But there is still a question-mark over how popular such capital shrinkage through own-share purchases will prove, especially as this route will tend to allow buying in of shares on only a small scale each year. Buying out hostile holders of stock may still carry a tax penalty—since a pure market transaction might be difficult to arrange. Nor will companies be able to use the legislation as a temporary way of absorbing cash

and thereby avoiding tax on interest, since the shares must be cancelled and cannot be fed out when cash is needed again. Nevertheless, some companies, notably those for which cash represents a high proportion of their market value—may find themselves under unaccustomed pressure from shareholders to take this course.

Laird Group

Thanks to its successful specialist divisions in transport engineering and long distance conveyor belts the Laird Group continues to weather the recession in solid style. A rise of almost a quarter in pre-tax profits for 1981 to £18.5m, however, does not allow for dilution after recent equity issues, and earnings per share are only fractionally up at 19p. Still, there is current cost cover of more than three times for a yield of 4.6 per cent at 125p.

A brief boom (now fading) in UK bus deliveries for some time on the back of the rapid transit train business, so that pre-interest profits from transport systems rose from £7m, to almost £10m in 1981. Specialist engineering, soon to be expanded by the addition of a new conveyor factory, improved from £3.4m to about £5m. Elsewhere, however, the picture proved patchy—the American Twist Drill company bought in 1980, for instance, was hit by the U.S. recession.

In 1982 trains and conveyor systems should continue to show reasonable growth and there could be an upturn in the continental motor components subsidiaries. On the other hand, the bus market is weaker. Overall profits could be up a little, and Laird ended last year with net cash. But in the slightly longer run it needs to show that its diversification policy can pay off; so far it does not look as though the U.S. acquisitions have covered their financing costs.

Fears over unbranded drugs use

By Sue Cameron, Chemicals Correspondent

HOECHST UK—part of the German-based chemicals conglomerate—has warned that the widespread replacement of brand-named drugs by cheaper generic ones "would eventually destroy the UK pharmaceutical industry."

The warning reflects growing fears among Britain's pharmaceutical companies that the Government may be considering new regulations that would make it easier to substitute generic—unbranded—drugs for higher-priced branded ones. The aim of such a move would be to cut the nation's drugs bill by as much as £80m a year.

Mr Brian Cromie, chairman of Hoechst UK's pharmaceutical division, is among those who have launched a strong attack on the initiative.

"If substitution were allowed, doctors would no longer know what was being dispensed, patients would be confused, products would not have the legal and moral backing of a major manufacturer, drug recalls would be difficult or impossible and the UK pharmaceutical industry, which has made such a major contribution to medicine and to the country's economy, would gradually be lost," he said at the weekend.

The Association of the British Pharmaceutical Industry, which represents most of the major drug companies operating in the UK, has produced a pamphlet, *The Importance of Brand Names*, warning of the effect on the industry of generic drugs.

"Widespread generic prescribing or substitution would put some companies out of business and diminish permanently the prospect of discovery of new medicines for the still unconquered diseases."

It claims the increased use of generics would only cut Britain's annual drugs bill by some 3 per cent. And it says this saving would represent only some 50 per cent of the cost of developing a single new medicine. It also warns that the cheapest generic drugs would probably be made abroad.

The industry's anxiety stems from speculation about an official report that is now at the Department of Health. The report has just been completed by a working party, composed mainly of officials and representatives of the British Medical Association, set up last year to look into the effective prescribing of drugs.

It is generally believed to call for local pharmacists to be able to substitute generic drugs for branded ones unless a doctor insists otherwise by ticking a special box on the prescription form.

Drug companies fear that many doctors would not bother.

BP Oil's losses mount to £126m on current cost basis

BY TERRY GARRETT

FULL CURRENT-COST losses from BP Oil Group, the oil-refining and marketing arm of British Petroleum in the UK and the Irish Republic, soared from £38m in 1980 to £126m last year.

The directors blame the deterioration on surplus capacity in the refining sector, in the UK and throughout Europe. They say there is little prospect of an upturn in demand.

When the parent company announced its 1981 results in mid-March, separate figures for the UK and the Irish Republic refining operations were not disclosed.

On a historic-cost basis BP Oil Group made profits of £23m, compared with £81m in 1980. This, however, is before taking

into account the much-increased costs of replacing oil sold.

This item alone wiped £109m (£81m in 1980) of historic-cost profits, producing an operating loss of £88m (a £10m loss in 1980) before tax, interest and extraordinary items. It is this £88m loss which the directors believe realistically reflects the group's performance.

The final quarter of 1981 showed some improvement over the previous three quarters. Historic profits amounted to about £7m in the closing three months while the operating loss, after the cost of sales adjustment, was under £4m.

The directors say, however, that margins are still depressed and show little sign of improvement to date, largely due to the

continuing competition generated by the excess of crude oil availability over demand. "As a result we are still operating at a loss against replacement costs."

"Physical sales of oil products fell by an eighth in 1981, to 15.64m tonnes. Apart from intense competition generated by overcapacity, BP Oil's directors blame the fall in sterling against the dollar and the non-availability of cheaper Saudi Arabian crude.

BP announced last year that its Kent refinery was to close in 1982. This will create a £54m exceptional debit in the 1981 accounts. The resulting economies, however, should improve performance by £50m a year from 1983.

TUC fight opens on Tebbit Bill

BY JOHN LLOYD, LABOUR EDITOR

EXECUTIVE members from the TUC's 108 affiliated unions meet at Wembley today to begin the campaign which they hope will destroy the Government's Employment Bill.

Union leaders are aware that the outright opposition they have pledged carries a large element of risk, and have laid plans for a massive publicity campaign to rouse their members from their apparent aversion to militant action.

Only the 30,000-strong actors' union Equity, has disturbed the appearance of monolithic opposition to the Bill.

Equity's ruling council remains determined to apply for state funds for its union ballots. This is in spite of a 394 to 89 vote supporting an emergency motion condemning the move at its annual conference yesterday.

Bid to agree training strategy

BY ALAN PIKE

EMPLOYERS AND union leaders will this week try to reach final agreement on proposals for providing all 16-year-old school leavers with a year-long programme of training, work experience and further education.

The Government intends to introduce the programme for unemployed 16-year-olds from September next year.

Unanimous agreement by both sides of industry on a Manpower Services Commission task group, which meets again on Thursday, is essential if there is to be any chance of Mr Norman Tebbit, Employment Secretary, being persuaded to extend the scheme into a system of training

ing for all school leavers. Union leaders and employers' representatives on the task group—together with educational and voluntary organisations—are agreed that training-for-all should be the goal.

There is also broad agreement that the Government's much-criticised proposed allowances on the new Youth Training Scheme—about £15 per week—are too low.

Possible alternative allowances of £25, £27.50 and £30 have been considered during the task group's discussions. The group believes that at least the 10 wastefetehe—least the lowest of these could be met within the £1.1bn financial ceiling which the

tribunals dealing with cases arising from the legislation; and a 10p per head levy to create a £1m "war" fund.

Some disagreement on the uses to which the fund is put is likely. Some unions want the money to be available to help pay unions' legal fees. But other, mainly left-led unions, argue that this would turn the TUC into a collection agency for employers.

Mr Moss Evans, general secretary of the Transport and General Workers Union, the country's largest union, told a conference of trade union delegates at the weekend that "the fight is not one we can afford to lose, nor is it one we can dodge. The issue is quite clear—we are fighting for survival."

News analysis, Page 6

Weather

UK TODAY

WARM in many parts though cooler with rain and mist in others.

SE, NW, Central England, E. Anglia, E. Midlands, SW. Scotland, N. Ireland. Cloudy with showers. Bright intervals. Max 16C (61F).

S.W. England, W. Midlands, Wales. Rain, perhaps heavy. Max 13C (55F).

E., N.E. England. Mainly dry and bright. Max 16C (61F).

Rest of Scotland. Mainly dry after rain. Sunny intervals. Max 15C (59F).

Outlook: Dry in North. Thundery rain in South.

WORLDWIDE weather table with columns for location, temperature, and other weather indicators.

TRAIL BLAZERS



"Our search for the best possible site covered many areas throughout the UK, and Wrexham proved to be the ideal location... with its close proximity to major UK markets."

John Brazier, General Manager, Hoya Corporation. Ophthalmic lens manufacturer, Hoya Corporation, is the first Japanese company to start-up production in Cwyd. Guided and supported by Cwyd's unbranded industrial development agencies, this venture has got off to a flying start.

Cwyd

offers you great potential in North East Wales

Nott warning

Continued from Page 1
although most of the negotiations were currently being carried out within the United Nations. The U.S. is reported to have ruled out the imposition of immediate economic sanctions by Washington on Argentina, although it is prepared to review its current cautious attitude if diplomatic efforts fail and the prospect of a confrontation between two of its allies becomes more likely.

City concern

Continued from Page 1
played down the importance of the market. Total British investment in Argentina in 1979 was estimated to be worth £200m at book value by the Trade Department, although this may be a considerable under-estimate.

Tory revolt

Continued from Page 1
The failures of the last few weeks mean, on his view, that it is only after killing a few of them and putting a Union Jack there that the Tory Party will be in a mood to be magnanimous and start negotiations.

MPs with doubts about the practicability of military action fearing another Suez like Suez have generally kept quiet, hoping that the mood will become less jingoistic with time.

